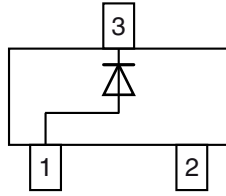
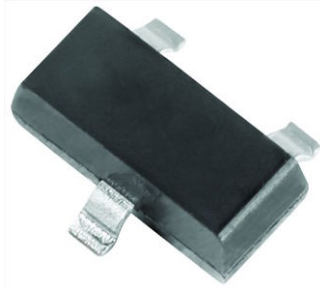


Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Ultra fast switching speed
- Surface mount package ideally suited for automatic insertion
- High conductance
- AEC-Q101 qualified available
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

DESIGN SUPPORT TOOLS click logo to get started


MECHANICAL DATA

Case: SOT-23

Weight: approx. 8.8 mg

Packaging codes / options:

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

PARTS TABLE

PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
BAS16	BAS16-E3-08 or BAS16-E3-18	Single	A6	Tape and reel
	BAS16-HE3-08 or BAS16-HE3-18			

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Non repetitive peak reverse voltage		V_{RM}	100	V
Repetitive peak reverse voltage = working peak reverse voltage = DC blocking voltage		$V_{RRM} = V_{RWM} = V_R$	75	V
Peak forward surge current	$t_p = 1\text{ s}$	I_{FSM}	1	A
	$t_p = 1\text{ }\mu\text{s}$	I_{FSM}	2	A
Average forward current	Half wave rectification with resistive load and $f \geq 50\text{ MHz}$, on ceramic substrate 8 mm x 10 mm x 0.7 mm	$I_{F(AV)}$	150	mA
Forward current	On ceramic substrate 8 mm x 10 mm x 0.7 mm	I_F	300	mA
Power dissipation	On ceramic substrate 8 mm x 10 mm x 0.7 mm	P_{tot}	350	mW

THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction ambient	On ceramic substrate 8 mm x 10 mm x 0.7 mm	R_{thJA}	357	K/W
Junction and storage temperature range		$T_j = T_{stg}$	-55 to +150	$^{\circ}\text{C}$
Operating temperature range		T_{op}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 1\text{ mA}$	V_F			0.715	V
	$I_F = 10\text{ mA}$	V_F			855	mV
	$I_F = 50\text{ mA}$	V_F			1	V
	$I_F = 150\text{ mA}$	V_F			1.25	V
Reverse current	$V_R = 75\text{ V}$	I_R			1000	nA
	$V_R = 75\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	I_R			50	μA
	$V_R = 25\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	I_R			30	μA
Diode capacitance	$V_R = 0, f = 1\text{ MHz}$	C_D			4	pF
Reverse recovery time	$I_F = 10\text{ mA}$ to $i_R = 1\text{ mA}$, $V_R = 6\text{ V}, R_L = 100\text{ }\Omega$	t_{rr}			6	ns

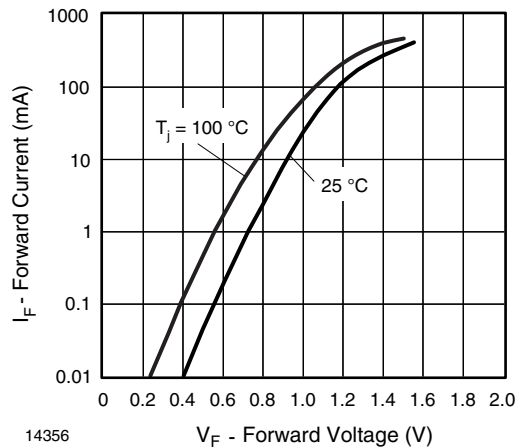
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

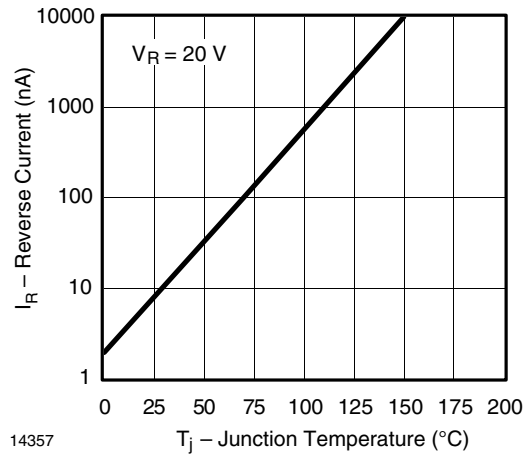
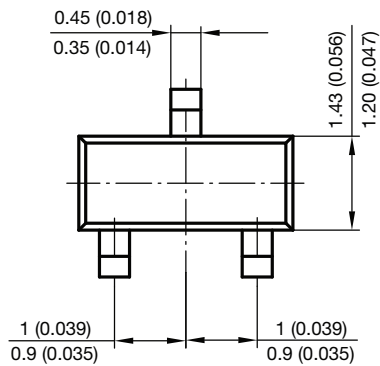


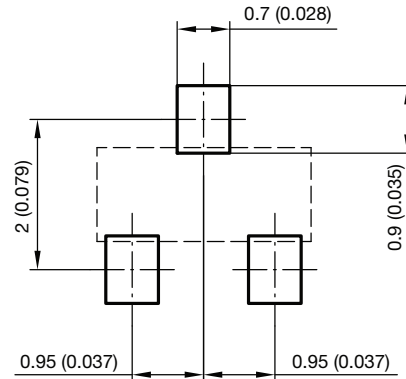
Fig. 2 - Reverse Current vs. Junction Temperature



PACKAGE DIMENSIONS in millimeters (inches): **SOT-23**



Foot print recommendation:



Document no.: 6.541-5014.01-4
Rev. 8 - Date: 23.Sept.2009
17418

High-speed diode

BAS16

FEATURES

- Small plastic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 75 V
- Repetitive peak reverse voltage: max. 85 V
- Repetitive peak forward current: max. 500 mA.

APPLICATIONS

- High-speed switching in hybrid thick and thin-film circuits.

DESCRIPTION

The BAS16 is a high-speed switching diode fabricated in planar technology, and encapsulated in a small SOT23 plastic SMD package.

MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾
BAS16	A6*

Note

1. * = p : Made in Hong Kong.
 * = t : Made in Malaysia.
 * = W : Made in China.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

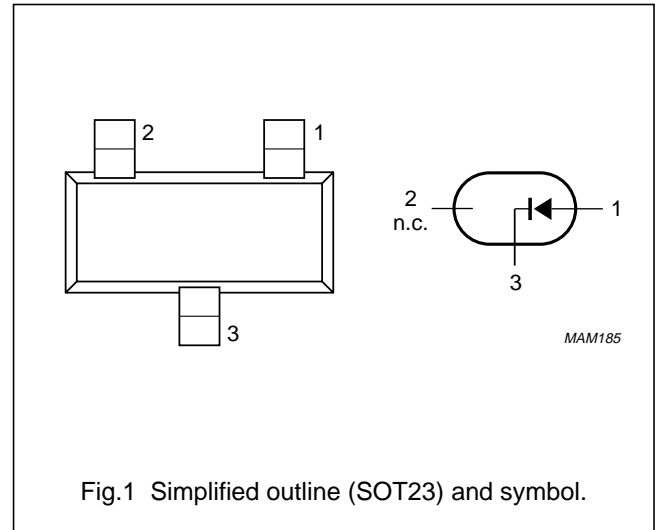
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{RRM}	repetitive peak reverse voltage		–	85	V
V_R	continuous reverse voltage		–	75	V
I_F	continuous forward current	see Fig.2; note 1	–	215	mA
I_{FRM}	repetitive peak forward current		–	500	mA
I_{FSM}	non-repetitive peak forward current	square wave; $T_j = 25\text{ °C}$ prior to surge; see Fig.4 $t = 1\ \mu\text{s}$ $t = 1\ \text{ms}$ $t = 1\ \text{s}$	–	4 1 0.5	A A A
P_{tot}	total power dissipation	$T_{amb} = 25\text{ °C}$; note 1	–	250	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C

Note

1. Device mounted on an FR4 printed-circuit board.

PINNING

PIN	DESCRIPTION
1	anode
2	not connected
3	cathode



High-speed diode

BAS16

ELECTRICAL CHARACTERISTICS

$T_j = 25\text{ °C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V_F	forward voltage	see Fig.3		
		$I_F = 1\text{ mA}$	715	mV
		$I_F = 10\text{ mA}$	855	mV
		$I_F = 50\text{ mA}$	1	V
I_R	reverse current	see Fig.5		
		$V_R = 25\text{ V}$	30	nA
		$V_R = 75\text{ V}$	1	μA
		$V_R = 25\text{ V}; T_j = 150\text{ °C}$	30	μA
		$V_R = 75\text{ V}; T_j = 150\text{ °C}$	50	μA
C_d	diode capacitance	$f = 1\text{ MHz}; V_R = 0$; see Fig.6	1.5	pF
t_{rr}	reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}; R_L = 100\ \Omega$; measured at $I_R = 1\text{ mA}$; see Fig.7	4	ns
V_{fr}	forward recovery voltage	when switched from $I_F = 10\text{ mA}; t_r = 20\text{ ns}$; see Fig.8	1.75	V

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-tp}$	thermal resistance from junction to tie-point		330	K/W
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	500	K/W

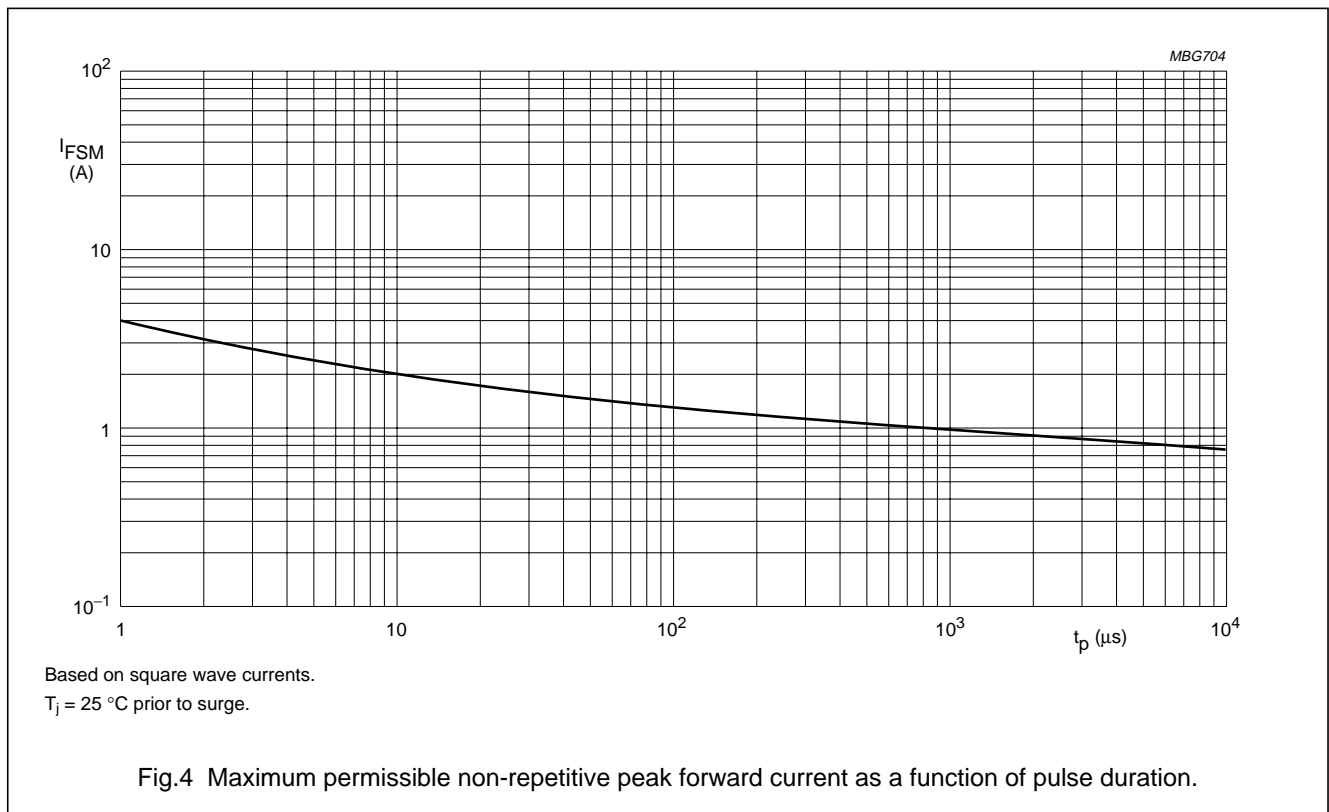
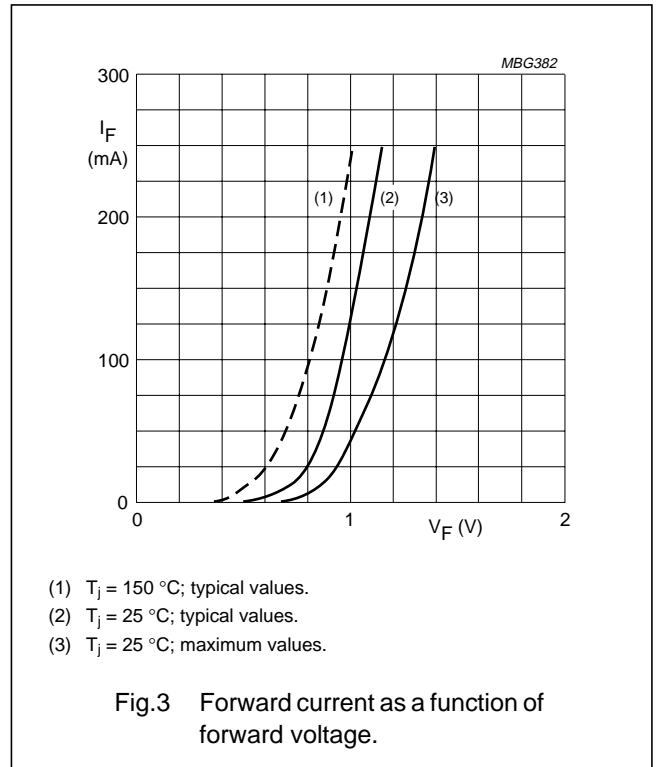
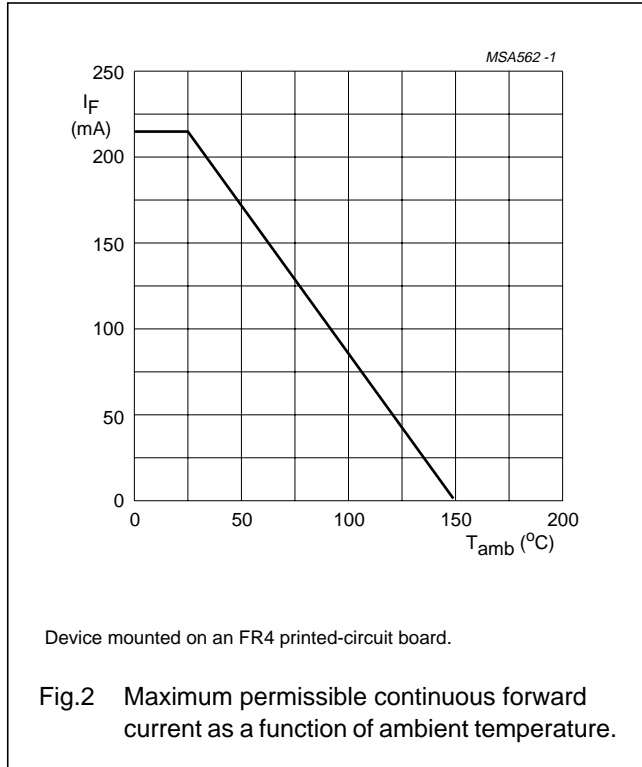
Note

1. Device mounted on an FR4 printed-circuit board.

High-speed diode

BAS16

GRAPHICAL DATA



High-speed diode

BAS16

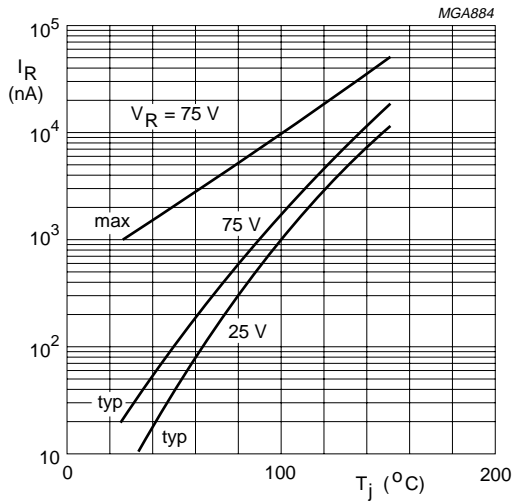
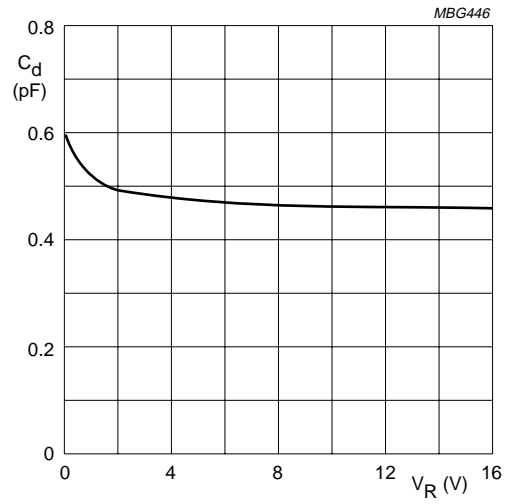


Fig.5 Reverse current as a function of junction temperature.

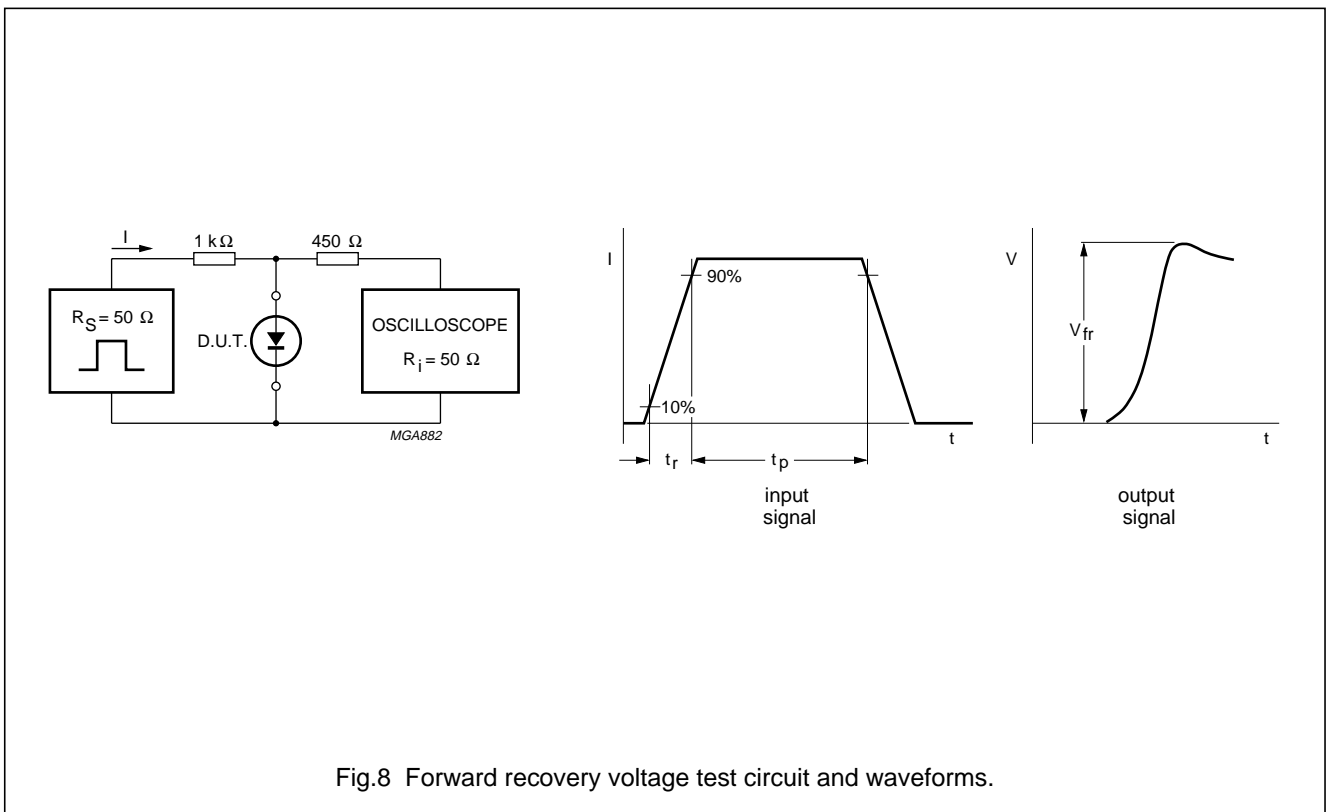
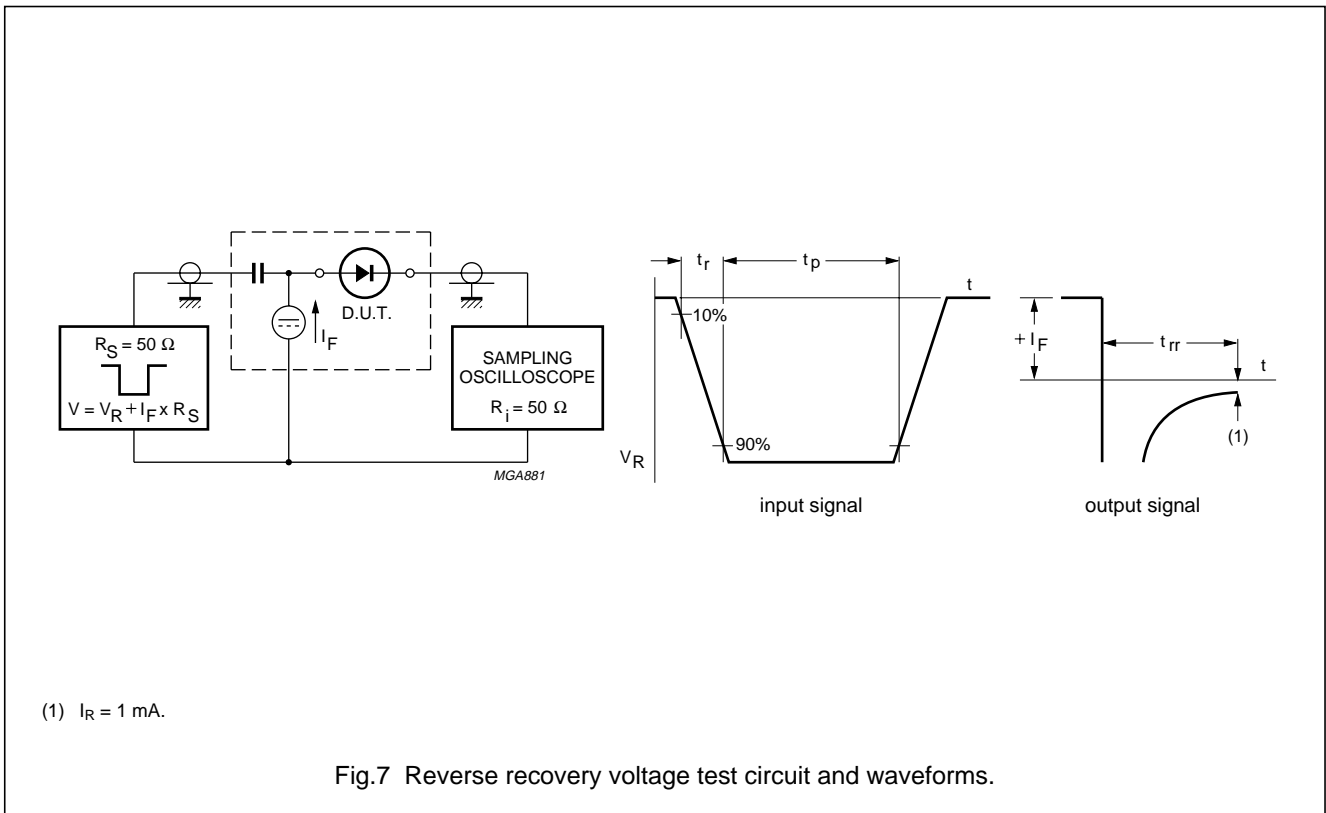


$f = 1$ MHz; $T_j = 25$ °C.

Fig.6 Diode capacitance as a function of reverse voltage; typical values.

High-speed diode

BAS16



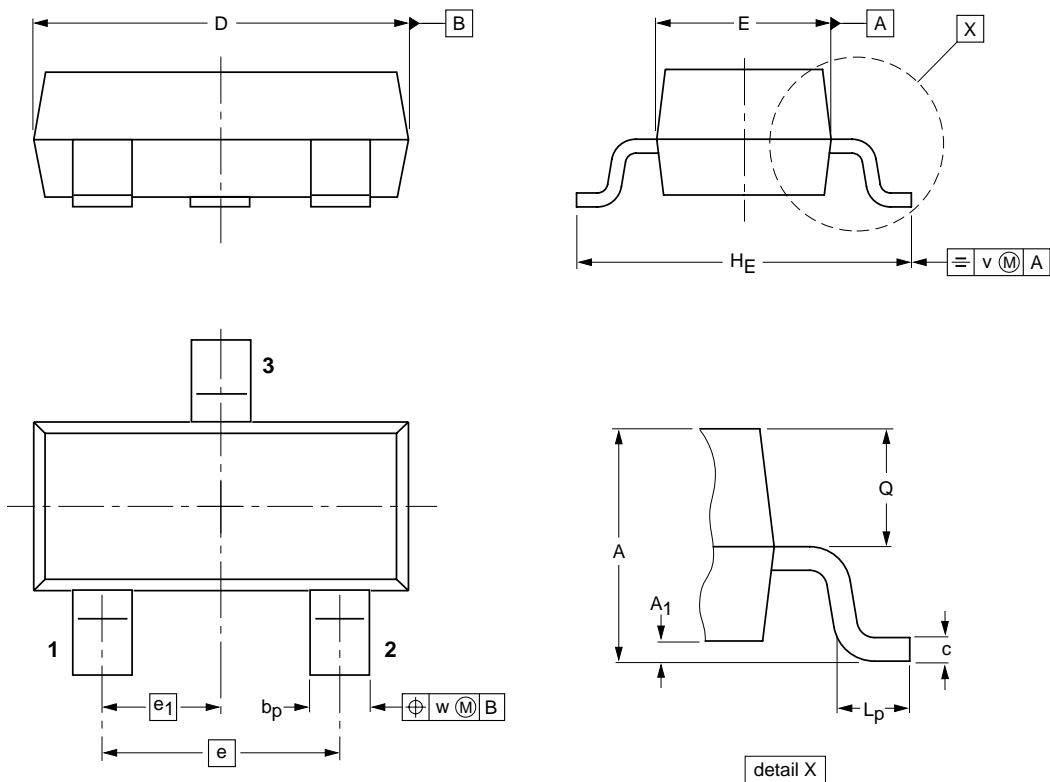
High-speed diode

BAS16

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOT23		TO-236AB			97-02-28 99-09-13

1.4 Quick reference data

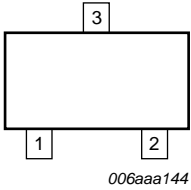
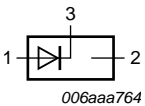
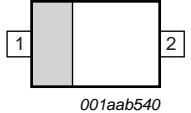
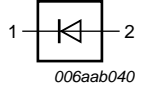
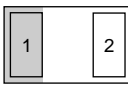
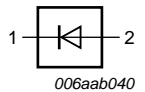
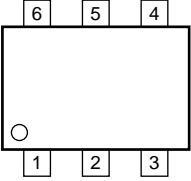
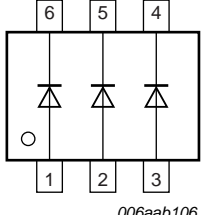
Table 2. Quick reference data

$T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Per diode						
V_R	reverse voltage		-	-	100	V
I_R	reverse current	$V_R = 80\text{ V}$	-	-	0.5	μA
t_{rr}	reverse recovery time	$I_F = 10\text{ mA}; I_R = 10\text{ mA}; R_L = 100\ \Omega; I_{R(meas)} = 1\text{ mA}$	-	-	4	ns

2. Pinning information

Table 3. Pinning

Pin	Description		Simplified outline	Graphic symbol
BAS16; BAS16T; BAS16W				
1	anode		 <p>006aaa144</p>	 <p>006aaa764</p>
2	not connected			
3	cathode			
BAS16H; BAS16J; BAS316; BAS516				
1	cathode	[1]	 <p>001aab540</p>	 <p>006aab040</p>
2	anode			
BAS16L				
1	cathode	[1]	 <p>Transparent top view</p>	 <p>006aab040</p>
2	anode			
BAS16VV; BAS16VY				
1	anode (diode 1)		 <p>001aab555</p>	 <p>006aab106</p>
2	anode (diode 2)			
3	anode (diode 3)			
4	cathode (diode 3)			
5	cathode (diode 2)			
6	cathode (diode 1)			

[1] The marking bar indicates the cathode.

3. Ordering information

Table 4. Ordering information

Type number	Package		Version
	Name	Description	
BAS16	TO-236AB	plastic surface-mounted package; 3 leads	SOT23
BAS16H	-	plastic surface-mounted package; 2 leads	SOD123F
BAS16J	SC-90	plastic surface-mounted package; 2 leads	SOD323F
BAS16L	DFN1006-2	leadless ultra small plastic package; 2 terminals; body 1.0 × 0.6 × 0.5 mm	SOD882
BAS16T	SC-75	plastic surface-mounted package; 3 leads	SOT416
BAS16VV	-	plastic surface-mounted package; 6 leads	SOT666
BAS16VY	SC-88	plastic surface-mounted package; 6 leads	SOT363
BAS16W	SC-70	plastic surface-mounted package; 3 leads	SOT323
BAS316	SC-76	plastic surface-mounted package; 2 leads	SOD323
BAS516	SC-79	plastic surface-mounted package; 2 leads	SOD523

4. Marking

Table 5. Marking codes

Type number	Marking code ^[1]
BAS16	A6*
BAS16H	A1
BAS16J	AR
BAS16L	S2
BAS16T	A6
BAS16VV	53
BAS16VY	16*
BAS16W	A6*
BAS316	A6
BAS516	6

[1] * = placeholder for manufacturing site code

5. Limiting values

Table 6. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
Per diode					
V_{RRM}	repetitive peak reverse voltage		-	100	V
V_R	reverse voltage		-	100	V

Table 6. Limiting values ...continued
 In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions		Min	Max	Unit	
I _F	forward current						
	BAS16		[1]	-	215	mA	
	BAS16H BAS16L		[2]	-	215	mA	
	BAS16T		[1]	-	155	mA	
	BAS16VV BAS16VY		[1][3]	-	200	mA	
	BAS16W		[1]	-	175	mA	
	BAS16J BAS316 BAS516		[1]	-	250	mA	
I _{FRM}	repetitive peak forward current	t _p ≤ 0.5 ms; δ ≤ 0.25		-	500	mA	
I _{FSM}	non-repetitive peak forward current	square wave; T _{j(init)} = 25 °C					
		t _p = 1 μs		-	4	A	
		t _p = 1 ms		-	1	A	
		t _p = 1 s		-	0.5	A	
P _{tot}	total power dissipation						
		BAS16	T _{amb} ≤ 25 °C	[1]	-	250	mW
		BAS16H	T _{amb} ≤ 25 °C	[2]	-	380	mW
				[5]	-	830	mW
		BAS16J	T _{amb} ≤ 25 °C	[5]	-	550	mW
		BAS16L	T _{amb} ≤ 25 °C	[2]	-	250	mW
		BAS16T	T _{sp} ≤ 90 °C	[1][4]	-	170	mW
		BAS16VV	T _{amb} ≤ 25 °C	[1][3]	-	180	mW
		BAS16VY	T _{sp} ≤ 85 °C	[1][3][6]	-	250	mW
		BAS16W	T _{amb} ≤ 25 °C	[1]	-	200	mW
		BAS316	T _{sp} ≤ 90 °C	[1][4]	-	400	mW
BAS516	T _{sp} ≤ 90 °C	[1][4]	-	500	mW		
Per device							
T _j	junction temperature			-	150	°C	
T _{amb}	ambient temperature			-65	+150	°C	
T _{stg}	storage temperature			-65	+150	°C	

[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

[2] Device mounted on an FR4 PCB with 60 μm copper strip line.

[3] Single diode loaded.

[4] Soldering point of cathode tab.

[5] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm².

[6] Soldering points at pins 4, 5 and 6.

6. Thermal characteristics

Table 7. Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air				
	BAS16		[1]	-	-	500 K/W
	BAS16H		[2]	-	-	330 K/W
			[3]	-	-	150 K/W
	BAS16J		[3]	-	-	230 K/W
	BAS16L		[2]	-	-	500 K/W
	BAS16VV		[2][4]	-	-	700 K/W
			[3][4]	-	-	410 K/W
BAS16W		[1]	-	-	625 K/W	
$R_{th(j-sp)}$	thermal resistance from junction to solder point					
	BAS16		-	-	330 K/W	
	BAS16H		[5]	-	-	70 K/W
	BAS16J		[5]	-	-	55 K/W
	BAS16T		-	-	350 K/W	
	BAS16VY		[4][6]	-	-	260 K/W
	BAS16W		-	-	300 K/W	
	BAS316		[5]	-	-	150 K/W
	BAS516		[5]	-	-	120 K/W

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

[2] Device mounted on an FR4 PCB with 60 μm copper strip line.

[3] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm^2 .

[4] Single diode loaded.

[5] Soldering point of cathode tab.

[6] Soldering points at pins 4, 5 and 6.

7. Characteristics

Table 8. Characteristics

$T_{amb} = 25\text{ °C}$ unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Per diode						
V_F	forward voltage		[1]			
		$I_F = 1\text{ mA}$	-	-	715	mV
		$I_F = 10\text{ mA}$	-	-	855	mV
		$I_F = 50\text{ mA}$	-	-	1	V
I_R	reverse current	$V_R = 25\text{ V}$	-	-	30	nA
		$V_R = 80\text{ V}$	-	-	0.5	μA
		$V_R = 25\text{ V}; T_j = 150\text{ °C}$	-	-	30	μA
		$V_R = 80\text{ V}; T_j = 150\text{ °C}$	-	-	50	μA
C_d	diode capacitance	$f = 1\text{ MHz}; V_R = 0\text{ V}$				
	BAS16; BAS16H; BAS16J; BAS16L; BAS16T; BAS16VV; BAS16VY; BAS16W; BAS316		-	-	1.5	pF
	BAS516		-	-	1	pF
t_{rr}	reverse recovery time	$I_F = 10\text{ mA}; I_R = 10\text{ mA};$ $R_L = 100\ \Omega;$ $I_{R(\text{meas})} = 1\text{ mA}$	-	-	4	ns
V_{FR}	forward recovery voltage	$I_F = 10\text{ mA}; t_r = 20\text{ ns}$	-	-	1.75	V

[1] Pulse test: $t_p \leq 300\ \mu\text{s}; \delta \leq 0.02$.



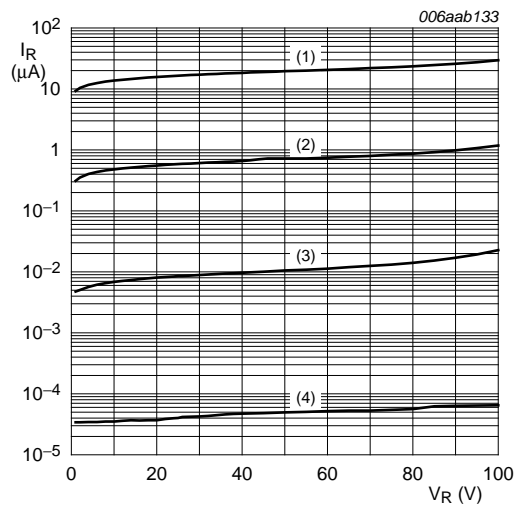
- (1) $T_{amb} = 150\text{ °C}$
- (2) $T_{amb} = 85\text{ °C}$
- (3) $T_{amb} = 25\text{ °C}$
- (4) $T_{amb} = -40\text{ °C}$

Fig 1. Forward current as a function of forward voltage; typical values



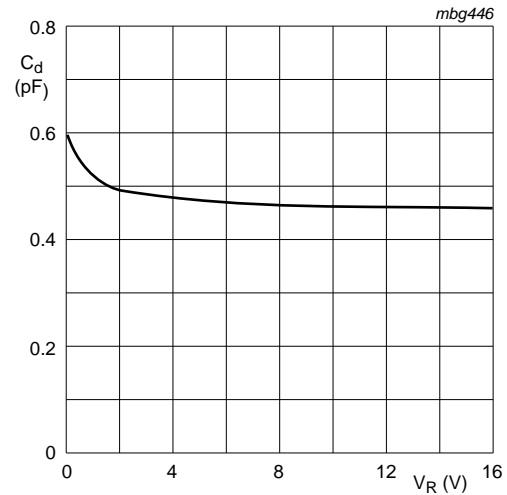
Based on square wave currents.
 $T_{j(init)} = 25\text{ °C}$

Fig 2. Non-repetitive peak forward current as a function of pulse duration; maximum values



- (1) $T_{amb} = 150\text{ °C}$
- (2) $T_{amb} = 85\text{ °C}$
- (3) $T_{amb} = 25\text{ °C}$
- (4) $T_{amb} = -40\text{ °C}$

Fig 3. Reverse current as a function of reverse voltage; typical values



$f = 1\text{ MHz}; T_{amb} = 25\text{ °C}$

Fig 4. Diode capacitance as a function of reverse voltage; typical values

8. Test information



(1) $I_R = 1 \text{ mA}$

Input signal: reverse pulse rise time $t_r = 0.6 \text{ ns}$; reverse voltage pulse duration $t_p = 100 \text{ ns}$; duty cycle $\delta = 0.05$

Oscilloscope: rise time $t_r = 0.35 \text{ ns}$

Fig 5. Reverse recovery time test circuit and waveforms



Input signal: forward pulse rise time $t_r = 20 \text{ ns}$; forward current pulse duration $t_p \geq 100 \text{ ns}$; duty cycle $\delta \leq 0.005$

Fig 6. Forward recovery voltage test circuit and waveforms

8.1 Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 - *Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

9. Package outline





Dimensions in mm

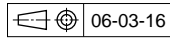


Fig 13. Package outline BAS16VY (SOT363)



Dimensions in mm

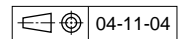
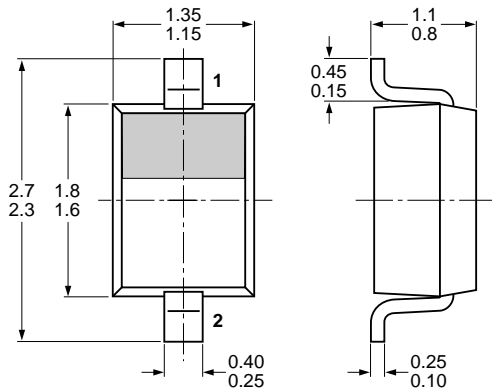


Fig 14. Package outline BAS16W (SOT323/SC-70)



Dimensions in mm

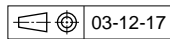
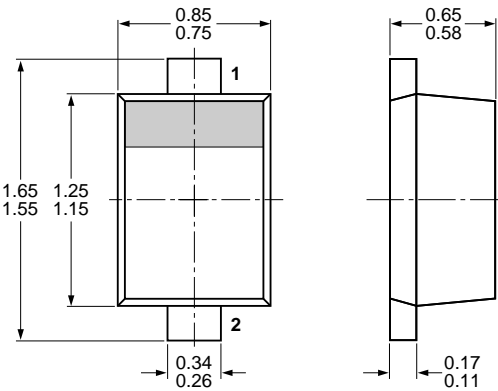


Fig 15. Package outline BAS316 (SOD323/SC-76)



Dimensions in mm

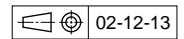


Fig 16. Package outline BAS516 (SOD523/SC-79)

10. Soldering

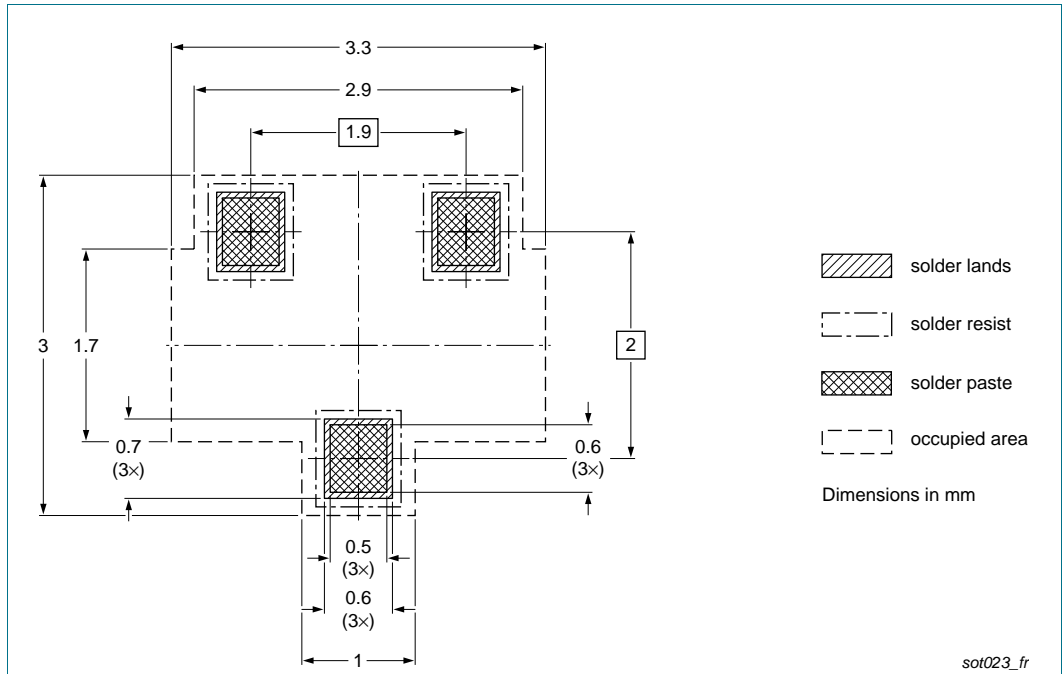


Fig 17. Reflow soldering footprint BAS16 (SOT23/TO-236AB)

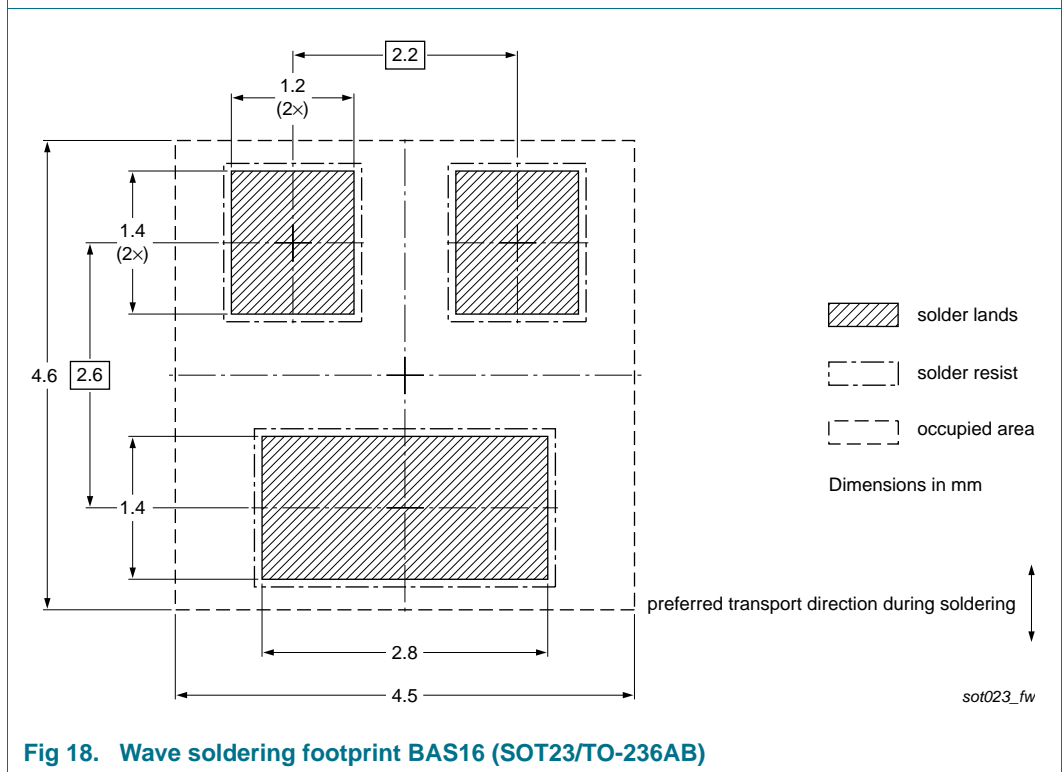


Fig 18. Wave soldering footprint BAS16 (SOT23/TO-236AB)



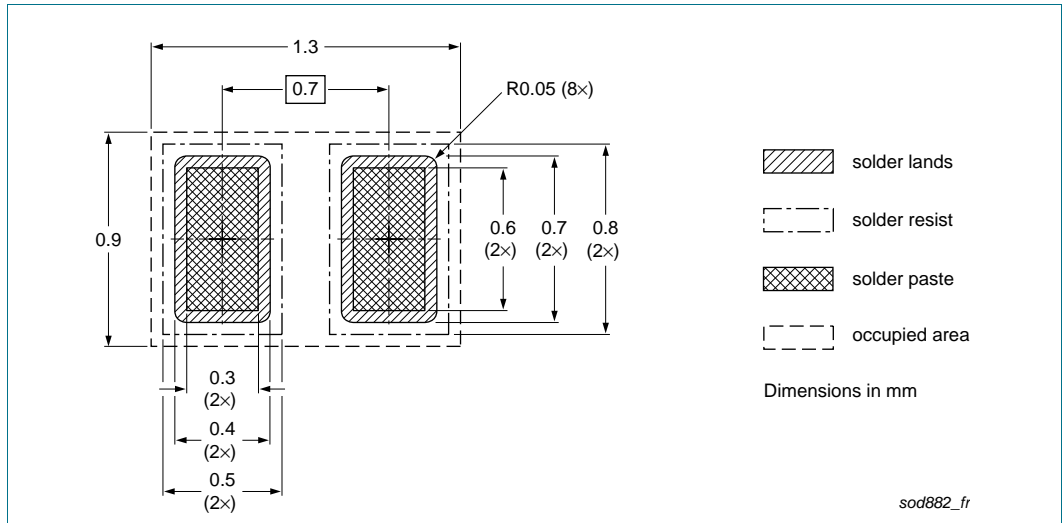


Fig 21. Reflow soldering footprint BAS16L (SOD882/DFN1006-2)

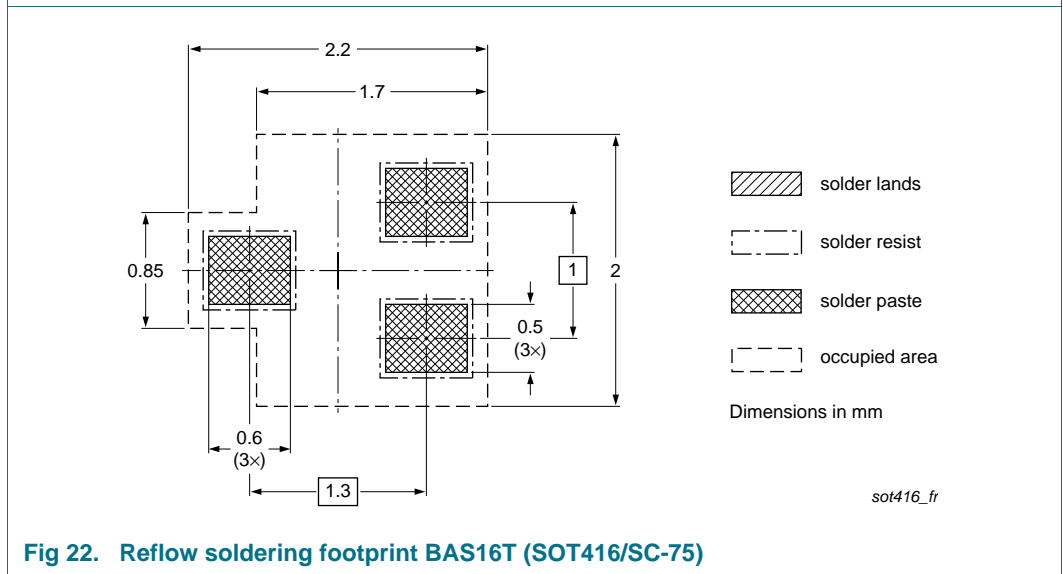


Fig 22. Reflow soldering footprint BAS16T (SOT416/SC-75)

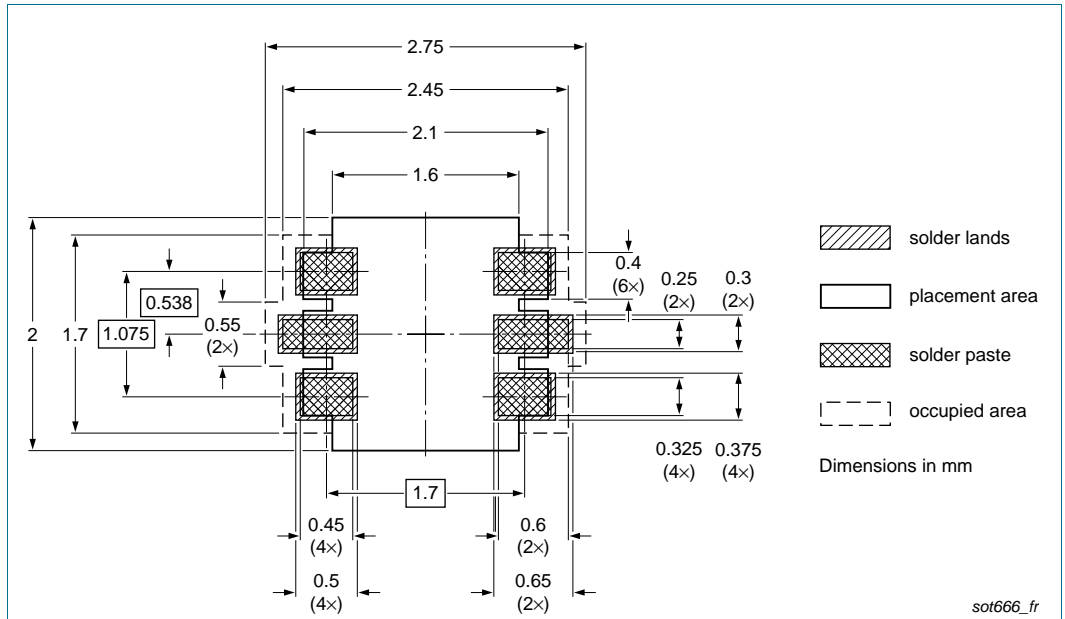


Fig 23. Reflow soldering footprint BAS16VV (SOT666)

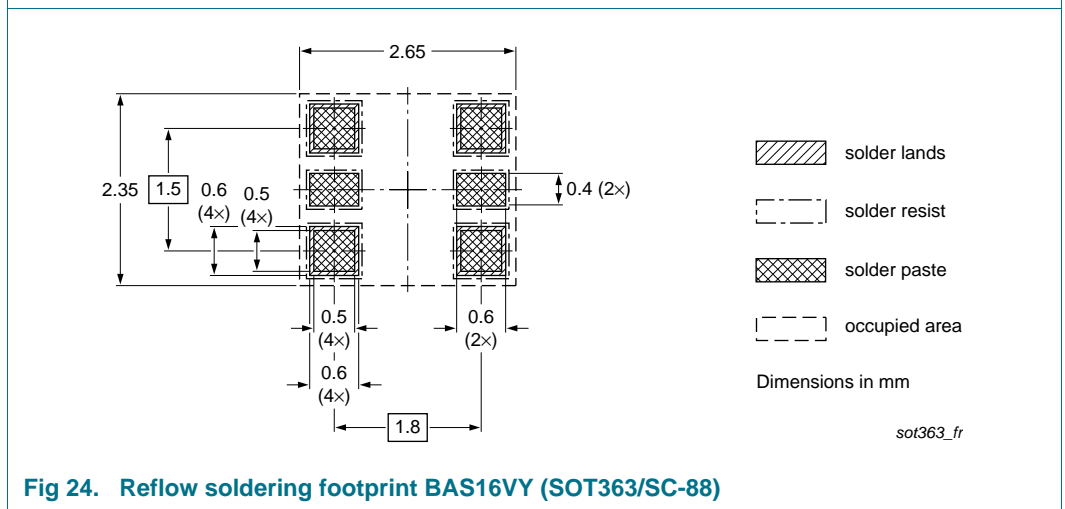


Fig 24. Reflow soldering footprint BAS16VY (SOT363/SC-88)

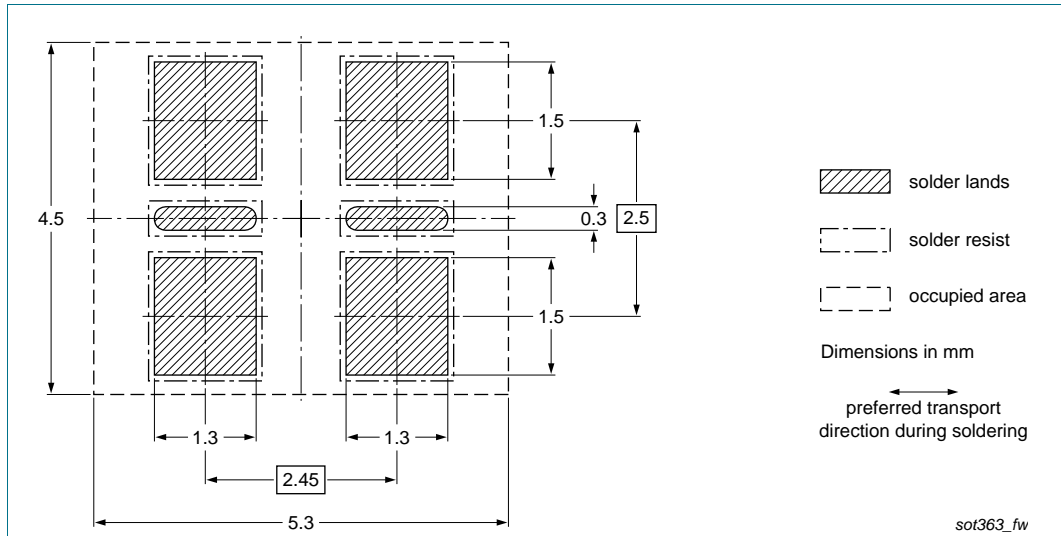


Fig 25. Wave soldering footprint BAS16VY (SOT363/SC-88)

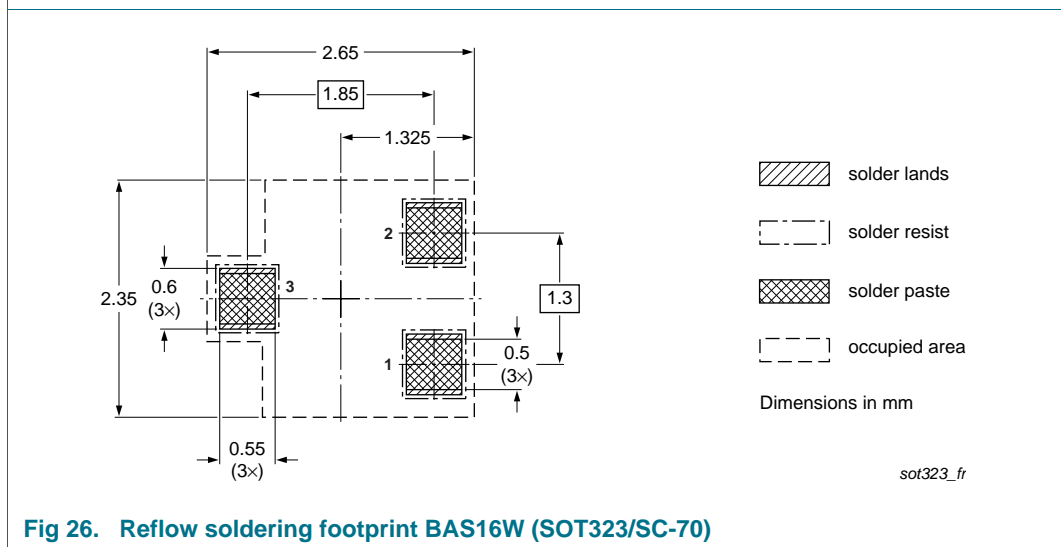


Fig 26. Reflow soldering footprint BAS16W (SOT323/SC-70)

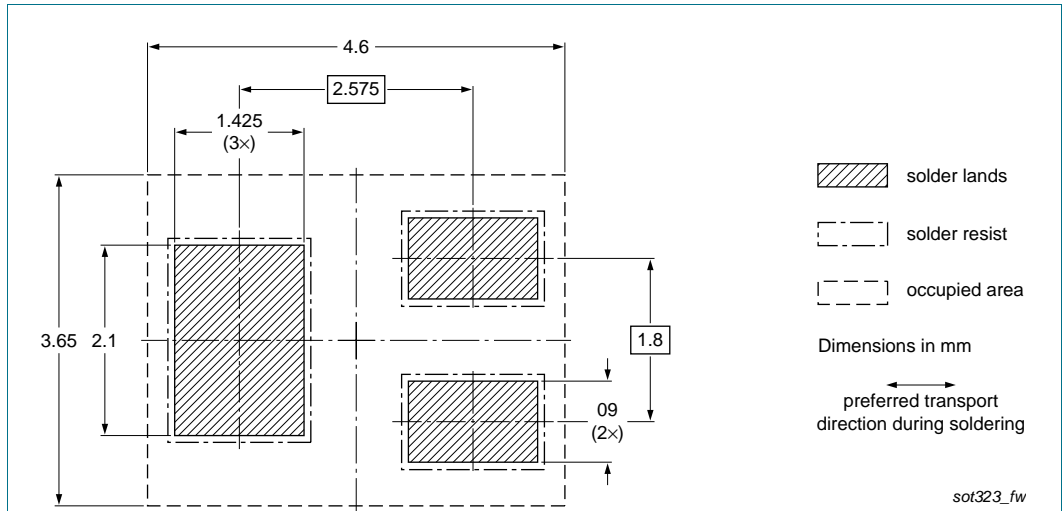


Fig 27. Wave soldering footprint BAS16W (SOT323/SC-70)

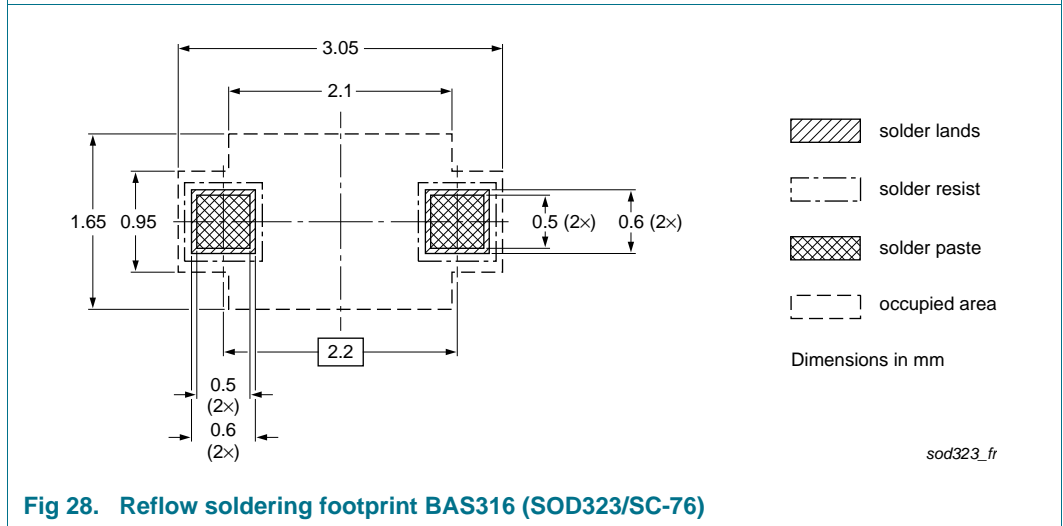


Fig 28. Reflow soldering footprint BAS316 (SOD323/SC-76)



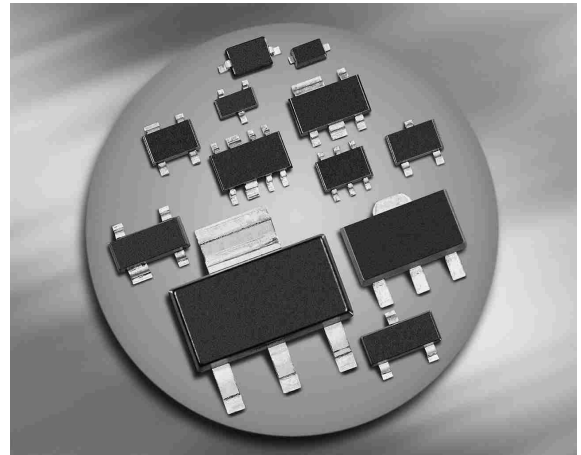
Fig 29. Wave soldering footprint BAS316 (SOD323/SC-76)



Fig 30. Reflow soldering footprint BAS516 (SOD523/SC-79)

Silicon Switching Diode

- For high-speed switching applications
- Pb-free (RoHS compliant) package ¹⁾
- Qualified according AEC Q101

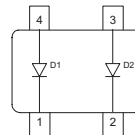
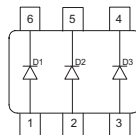
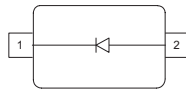
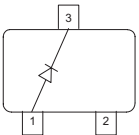


BAS16
BAS16W

BAS16-02L
BAS16-02V
BAS16-02W
BAS16-03W

BAS16S
BAS16U

BAS16-07L4



Type	Package	Configuration	Marking
BAS16	SOT23	single	A6s
BAS16-02L*	TSLP-2-1	single, leadless	A6
BAS16-02V	SC79	single	6
BAS16-02W	SCD80	single	A6
BAS16-03W	SOD323	single	white B
BAS16-07L4*	TSLP-4-4	parallel pair, leadless	6A
BAS16S	SOT363	parallel triple	A6s
BAS16U	SC74	parallel triple	A6s
BAS16W	SOT323	single	A6s

* Preliminary Data

¹Pb-containing package may be available upon special request

Maximum Ratings at $T_A = 25\text{ °C}$, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	80	V
Peak reverse voltage	V_{RM}	85	
Forward current	I_F		mA
BAS16		250	
BAS16-02L, -07L4		200	
BAS16-02V, -02W		200	
BAS16-03W		250	
BAS16S		200	
BAS16U		200	
BAS16W		250	
Non-repetitive peak surge forward current	I_{FSM}		A
$t = 1\ \mu\text{s}$, BAS16/ S/ U/ W/ -03W		4.5	
$t = 1\ \mu\text{s}$, BAS16-02L/ -02V/ -02W/ -07L4		2.5	
$t = 1\ \text{s}$		0.5	
Total power dissipation	P_{tot}		mW
BAS16, $T_S \leq 54\text{ °C}$		370	
BAS16-02L, -07L4, $T_S \leq 130\text{ °C}$		250	
BAS16-02V, -02W, $T_S \leq 120\text{ °C}$		250	
BAS16-03W, $T_S \leq 116\text{ °C}$		250	
BAS16S, $T_S \leq 85\text{ °C}$		250	
BAS16U, $T_S \leq 113\text{ °C}$		250	
BAS16W, $T_S \leq 119\text{ °C}$		250	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point ¹⁾	R_{thJS}		K/W
BAS16, BAS16S		≤ 260	
BAS16-02L, -07L4		≤ 80	
BAS16-02V, -02W		≤ 120	
BAS16-03W		≤ 135	
BAS16U		≤ 150	
BAS16W		≤ 125	

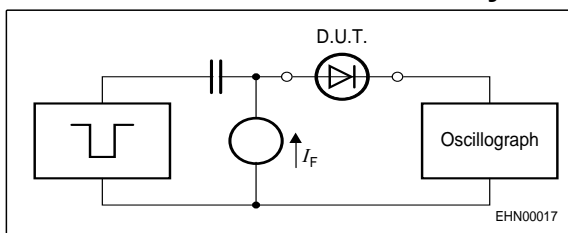
Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)} = 100 \mu\text{A}$	$V_{(BR)}$	85	-	-	V
Reverse current $V_R = 75 \text{ V}$ $V_R = 25 \text{ V}, T_A = 150^\circ\text{C}$ $V_R = 75 \text{ V}, T_A = 150^\circ\text{C}$	I_R	-	-	1 30 50	μA
Forward voltage $I_F = 1 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 50 \text{ mA}$ $I_F = 100 \text{ mA}$ $I_F = 150 \text{ mA}$	V_F	-	-	715 855 1000 1200 1250	mV
Forward recovery voltage $I_F = 10 \text{ mA}, t_P = 20 \text{ ns}$	V_{fr}	-	-	1.75	V

¹⁾For calculation of R_{thJA} please refer to Application Note Thermal Resistance

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Diode capacitance $V_R = 0\text{ V}$, $f = 1\text{ MHz}$	C_T	-	-	2	pF
Reverse recovery time $I_F = 10\text{ mA}$, $I_R = 10\text{ mA}$, measured at $I_R = 1\text{ mA}$, $R_L = 100\ \Omega$	t_{rr}	-	-	4	ns

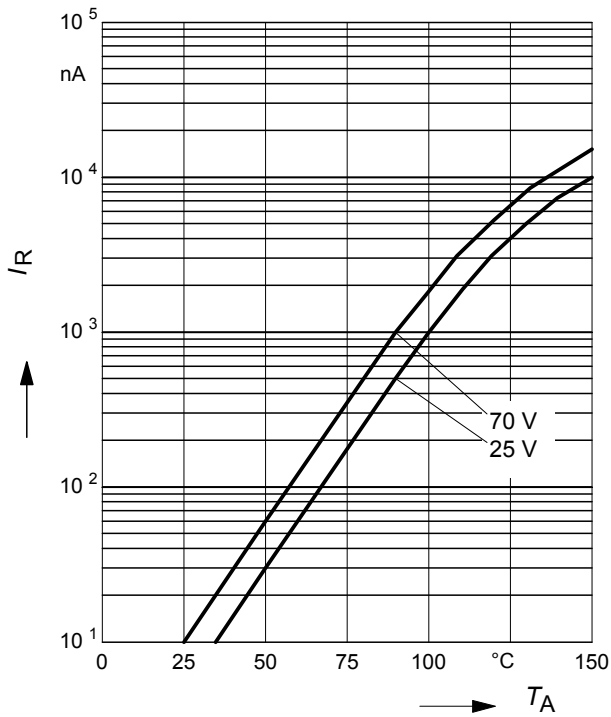
Test circuit for reverse recovery time


Pulse generator: $t_p = 100\text{ ns}$, $D = 0.05$, $t_r = 0.6\text{ ns}$,
 $R_i = 50\ \Omega$

Oscilloscope: $R = 50\ \Omega$, $t_r = 0.35\text{ ns}$, $C = 0.05\text{ pF}$

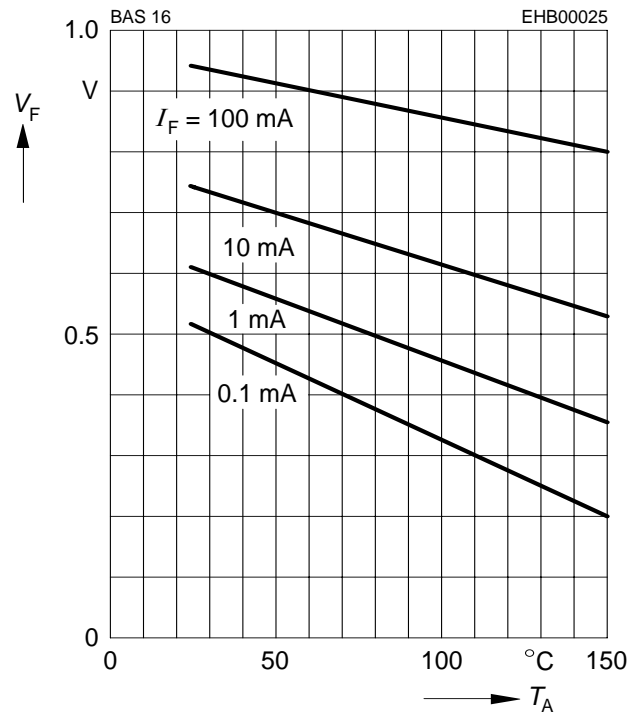
Reverse current $I_R = f(T_A)$

$V_R =$ Parameter



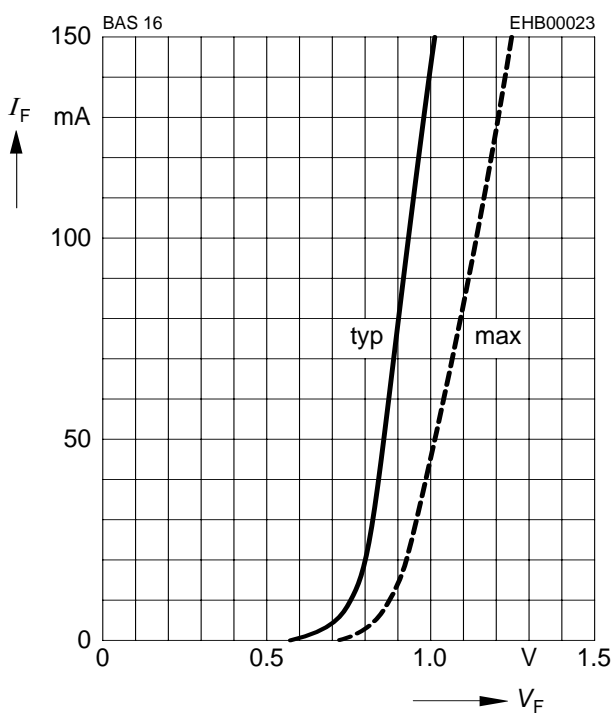
Forward Voltage $V_F = f(T_A)$

$I_F =$ Parameter



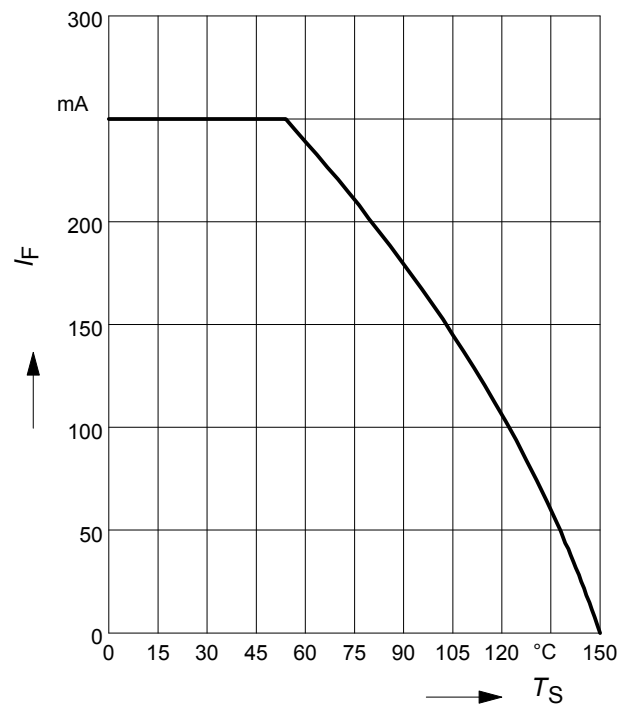
Forward current $I_F = f(V_F)$

$T_A = 25^\circ\text{C}$



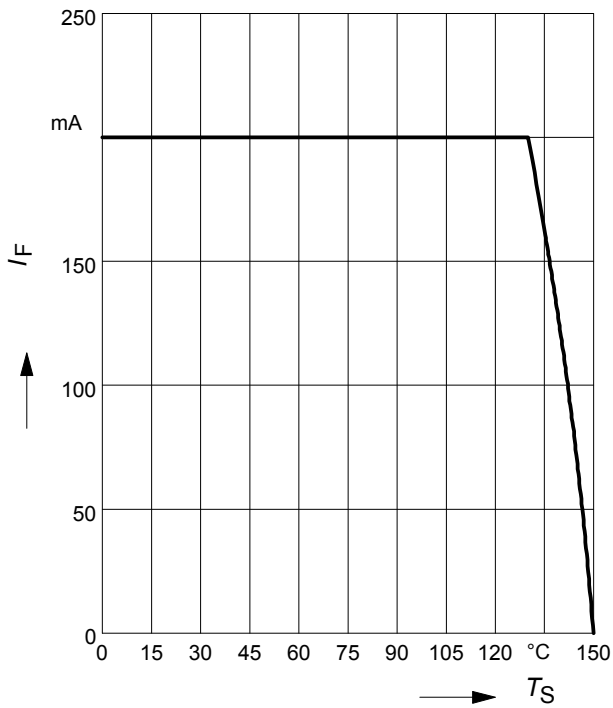
Forward current $I_F = f(T_S)$

BAS16



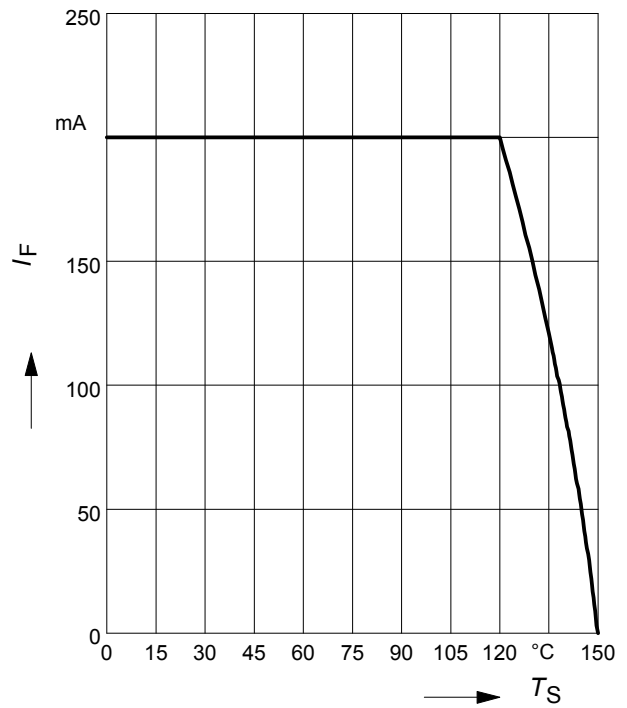
Forward current $I_F = f(T_S)$

BAS16-02L, -07L4



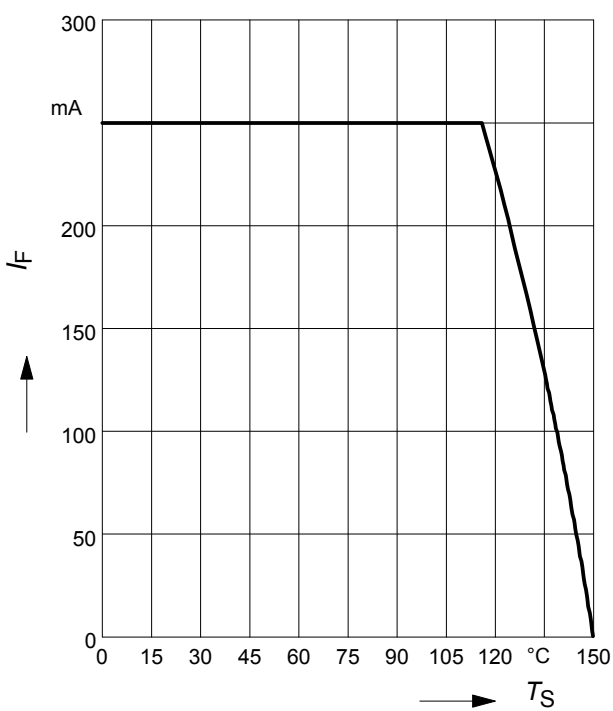
Forward current $I_F = f(T_S)$

BAS16-02V, -02W



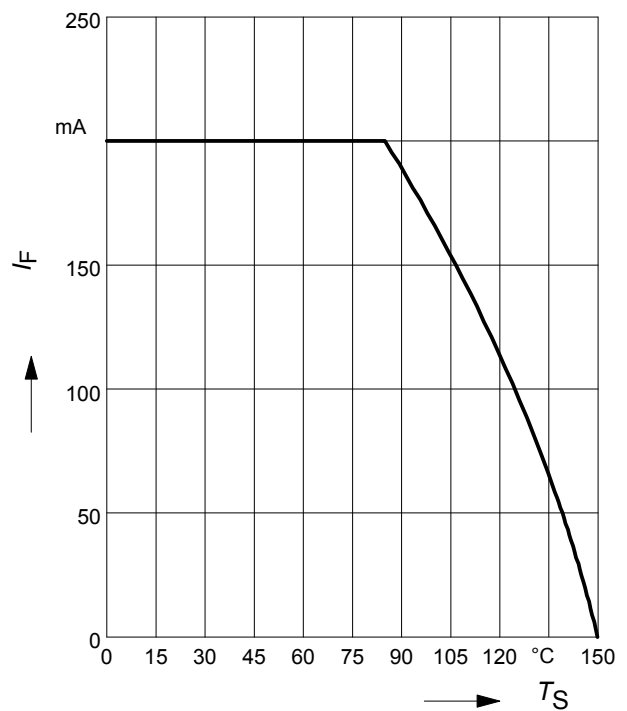
Forward current $I_F = f(T_S)$

BAS16-03W



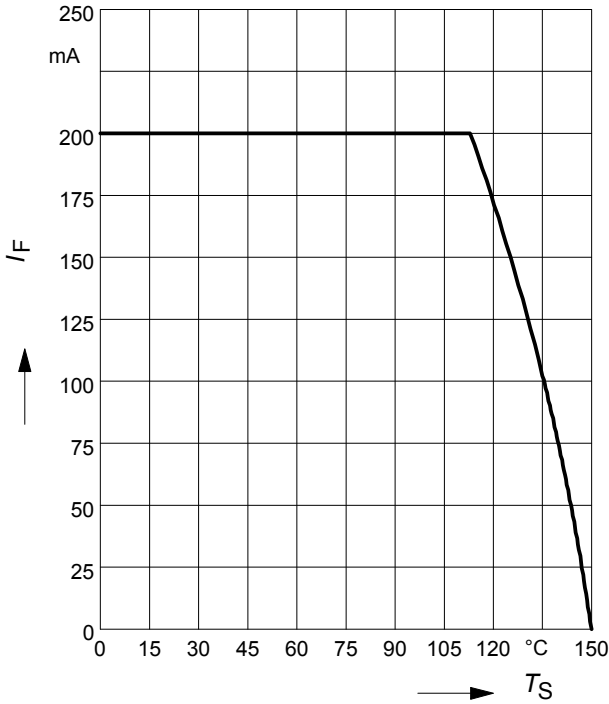
Forward current $I_F = f(T_S)$

BAS16S



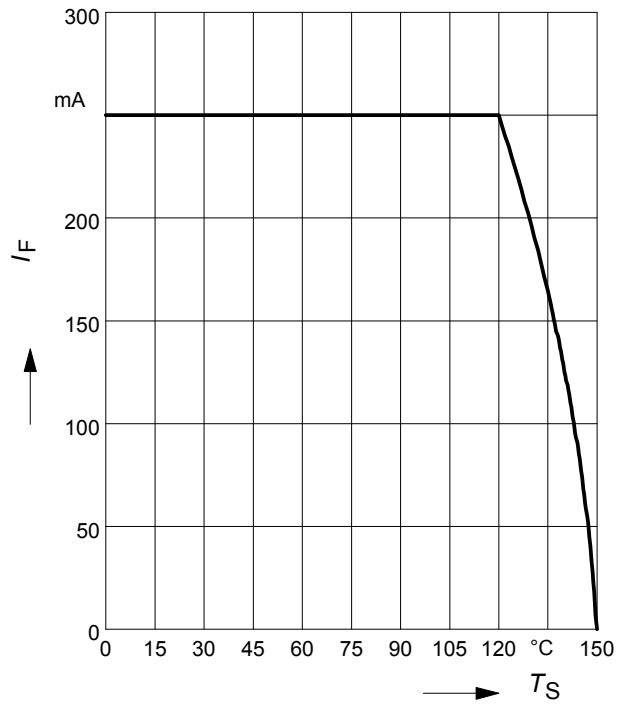
Forward current $I_F = f(T_S)$

BAS16U



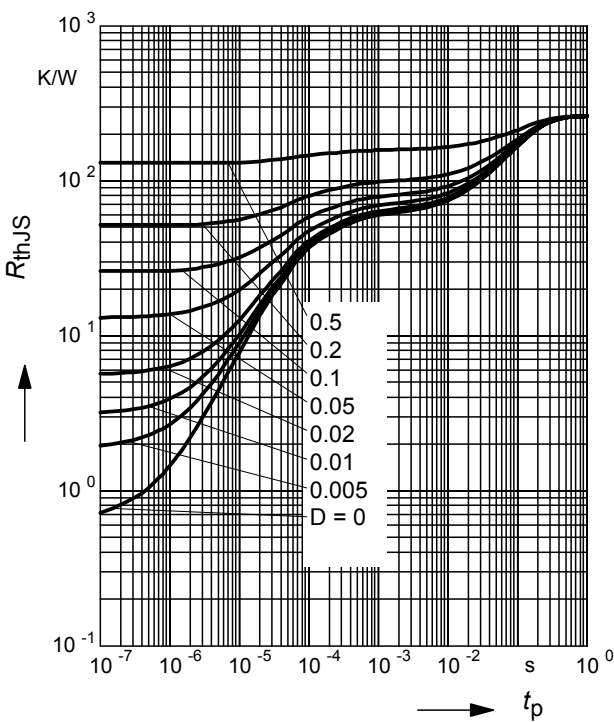
Forward current $I_F = f(T_S)$

BAS16W



Permissible Puls Load $R_{thJS} = f(t_p)$

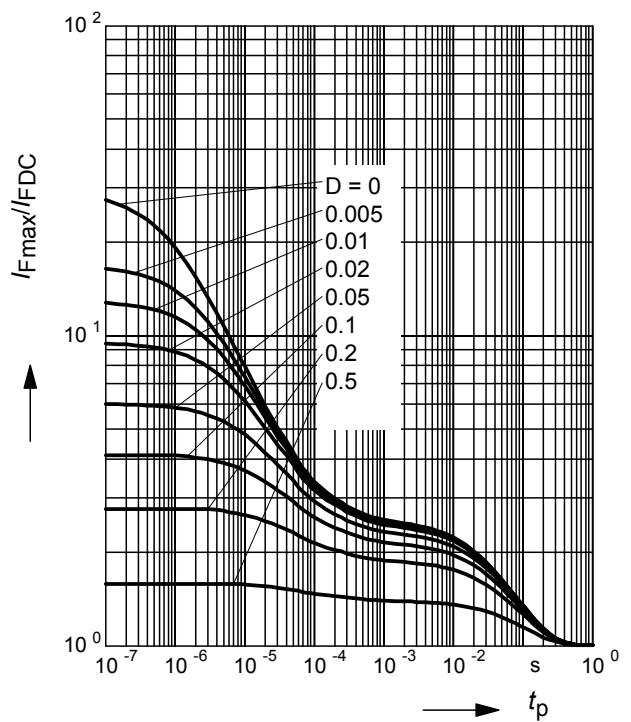
BAS16



Permissible Pulse Load

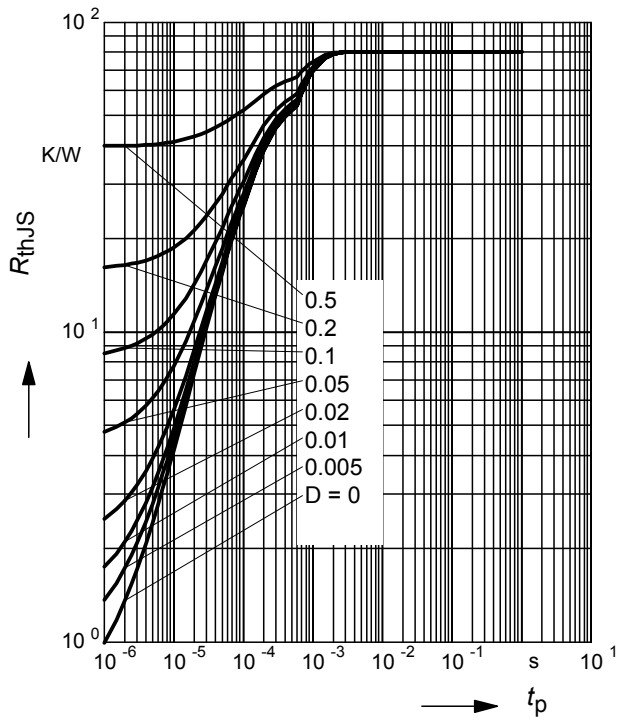
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16



Permissible Puls Load $R_{thJS} = f(t_p)$

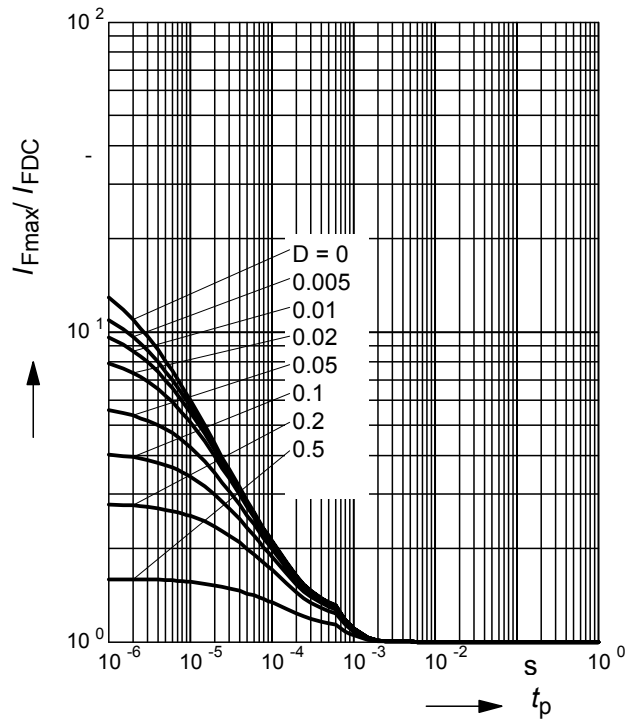
BAS16-02L, -07L4



Permissible Pulse Load

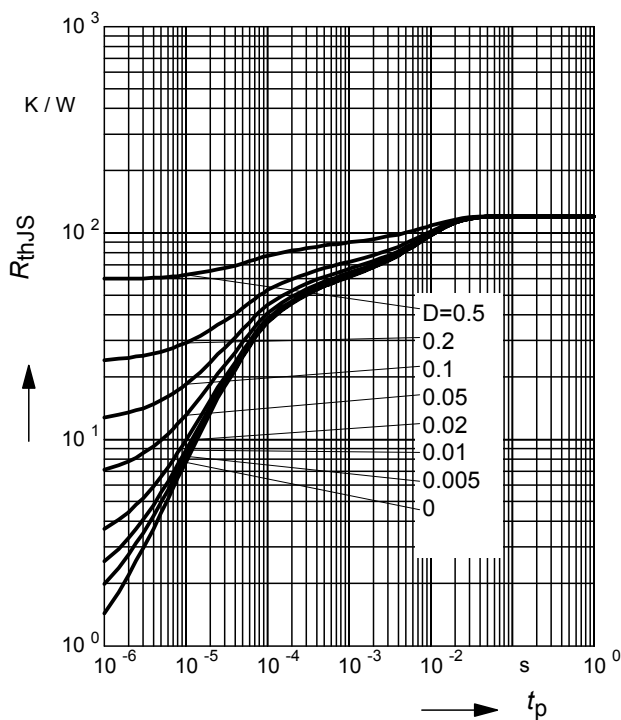
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16-02L, -07L4



Permissible Puls Load $R_{thJS} = f(t_p)$

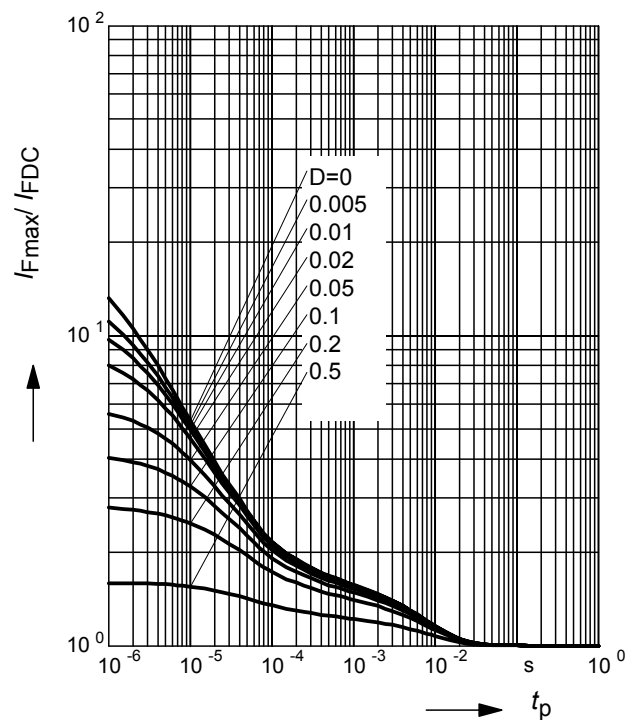
BAS16-02V, -02W



Permissible Pulse Load

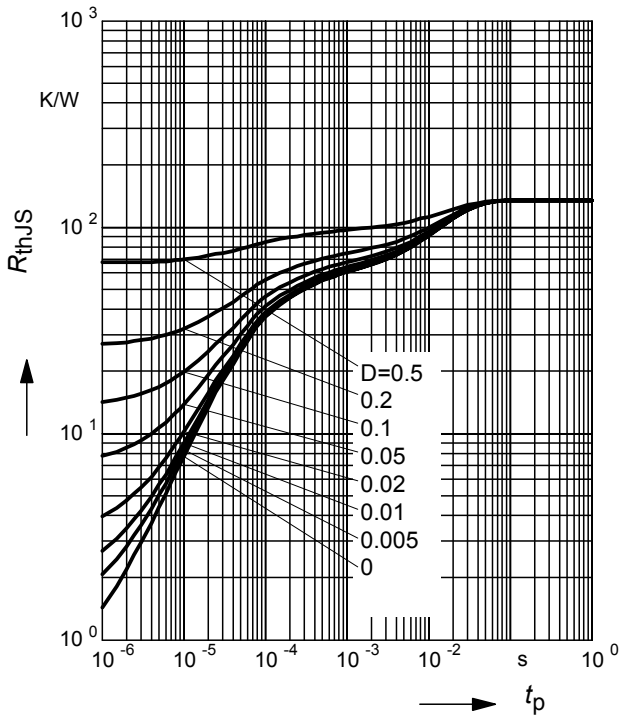
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16-02V, -02W



Permissible Puls Load $R_{thJS} = f(t_p)$

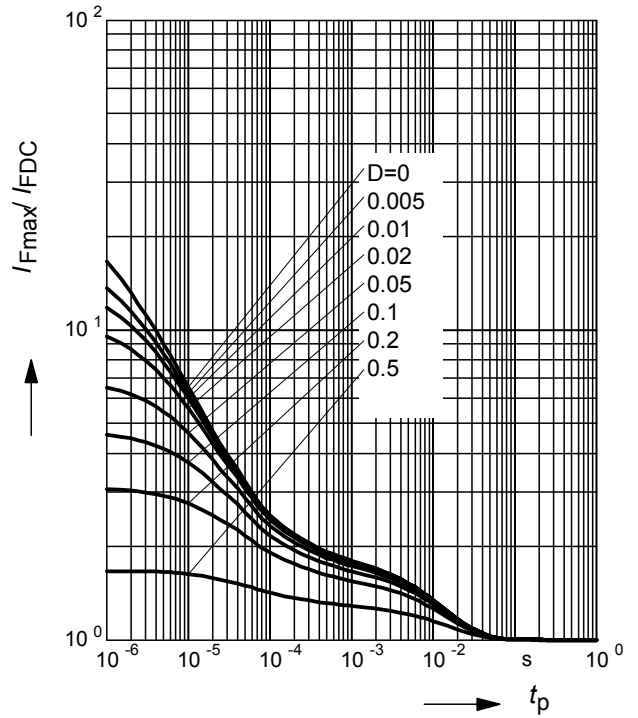
BAS16-03W



Permissible Pulse Load

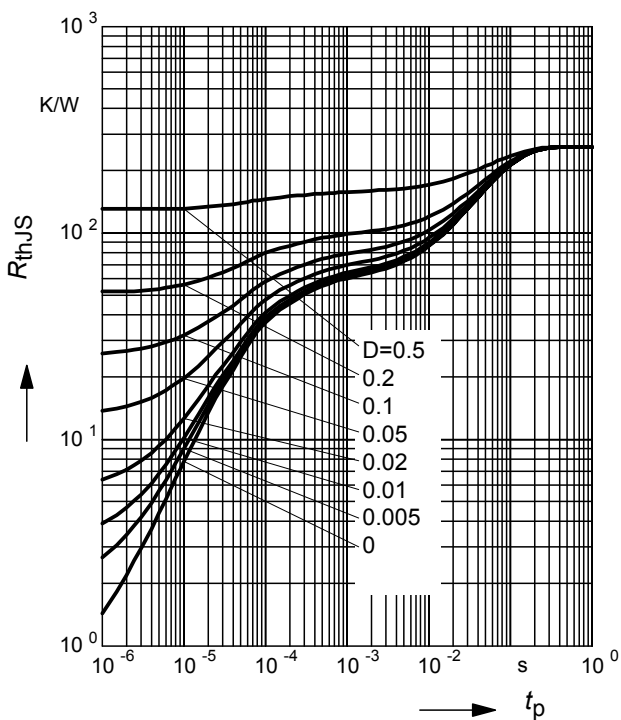
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16-03W



Permissible Puls Load $R_{thJS} = f(t_p)$

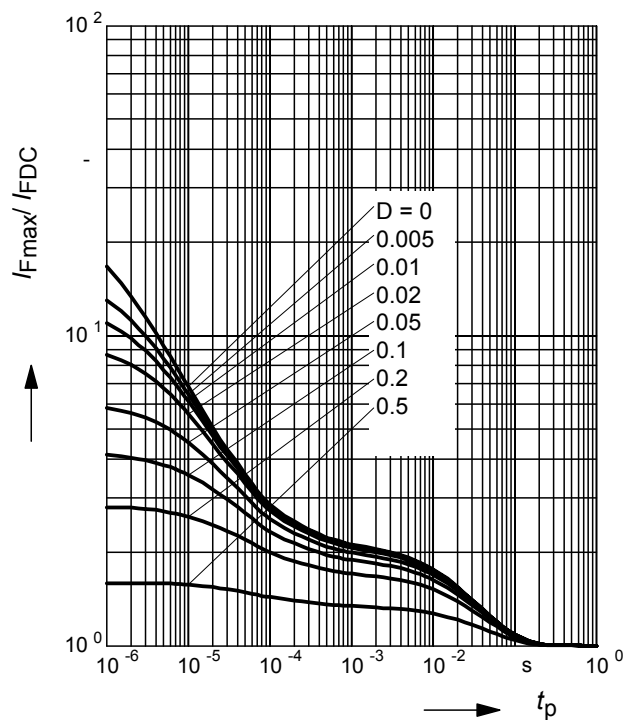
BAS16S



Permissible Pulse Load

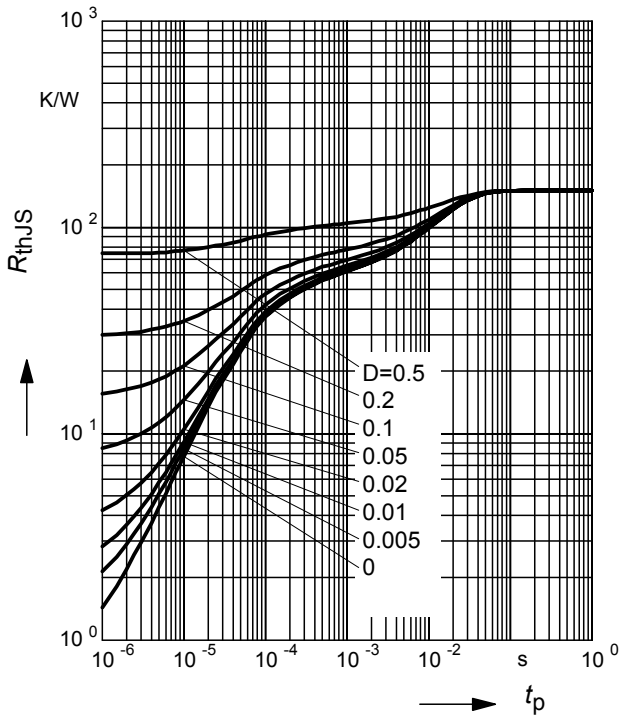
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16S



Permissible Puls Load $R_{thJS} = f(t_p)$

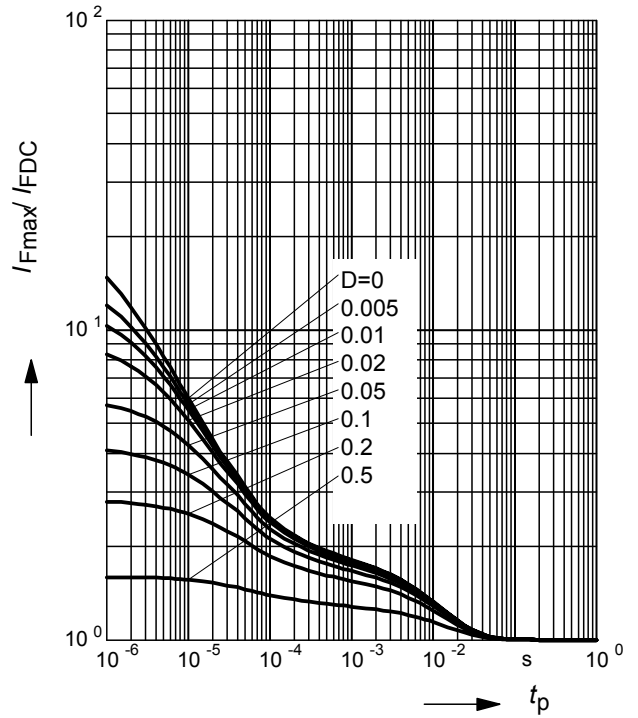
BAS16U



Permissible Pulse Load

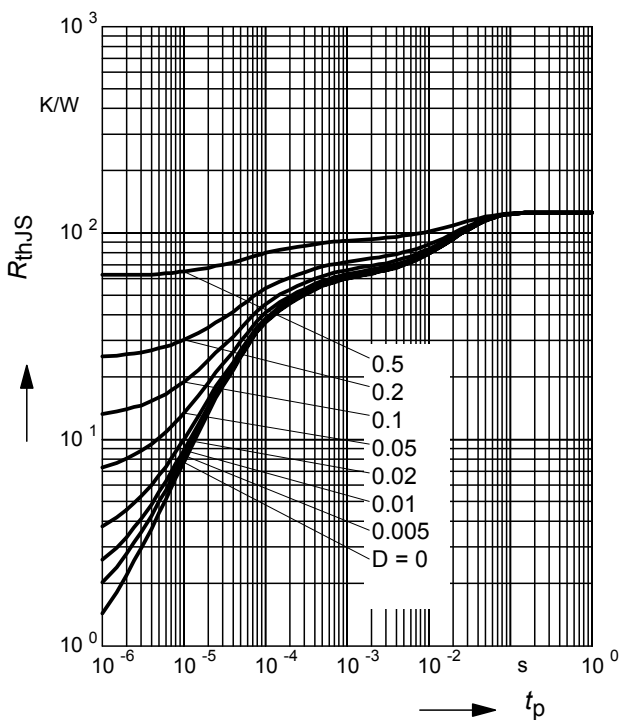
$I_{Fmax} / I_{FDC} = f(t_p)$

BAS16U



Permissible Puls Load $R_{thJS} = f(t_p)$

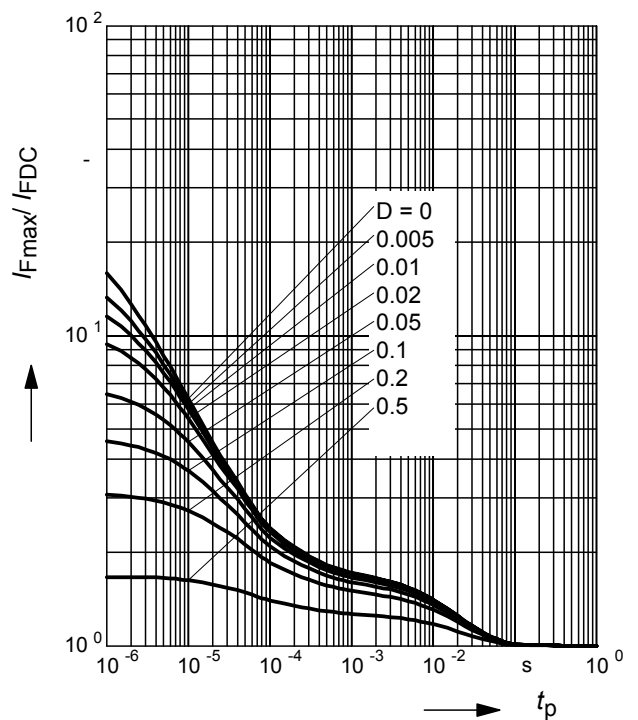
BAS16W



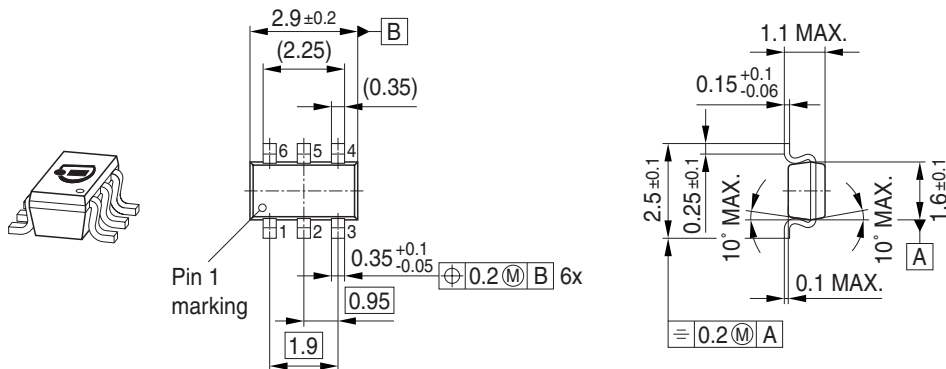
Permissible Pulse Load

$I_{Fmax} / I_{FDC} = f(t_p)$

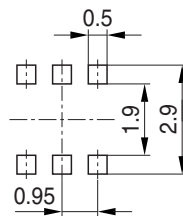
BAS16W



Package Outline

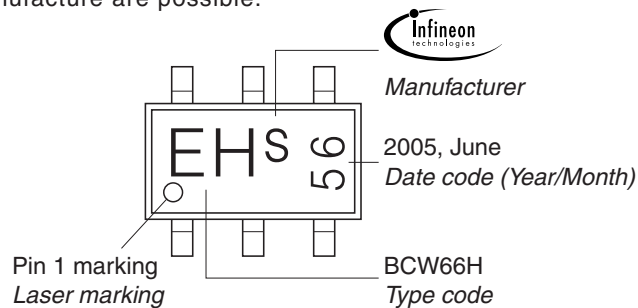


Foot Print



Marking Layout (Example)

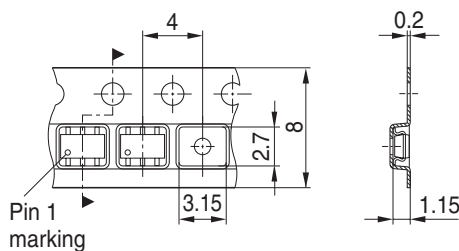
Small variations in positioning of Date code, Type code and Manufacture are possible.



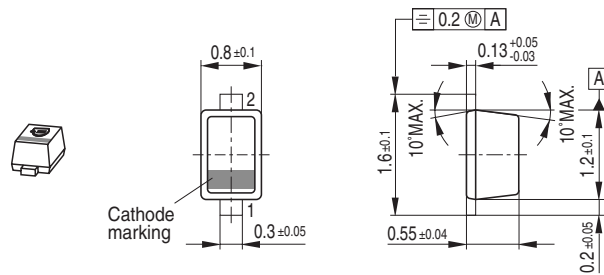
Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel

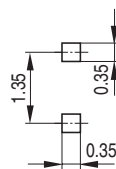
For symmetric types no defined Pin 1 orientation in reel.



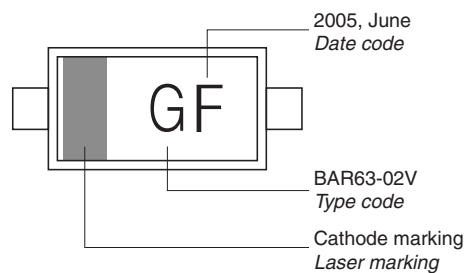
Package Outline



Foot Print

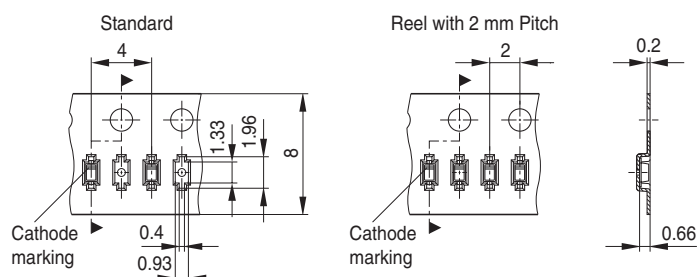


Marking Layout (Example)

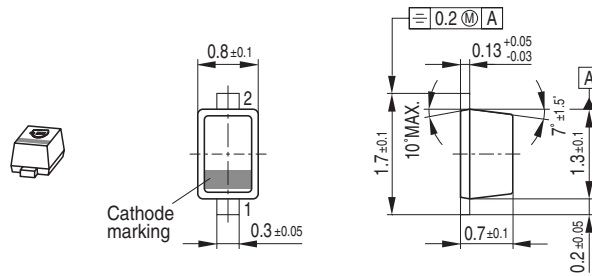


Standard Packing

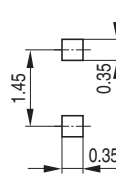
Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 180 mm = 8.000 Pieces/Reel (2 mm Pitch)
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



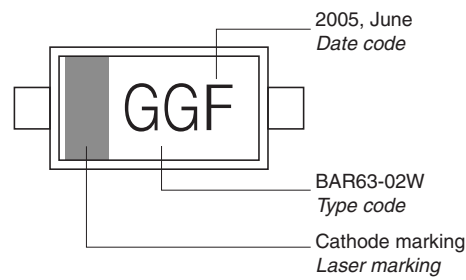
Package Outline



Foot Print

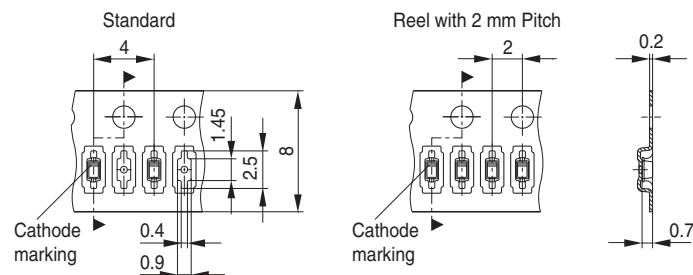


Marking Layout (Example)

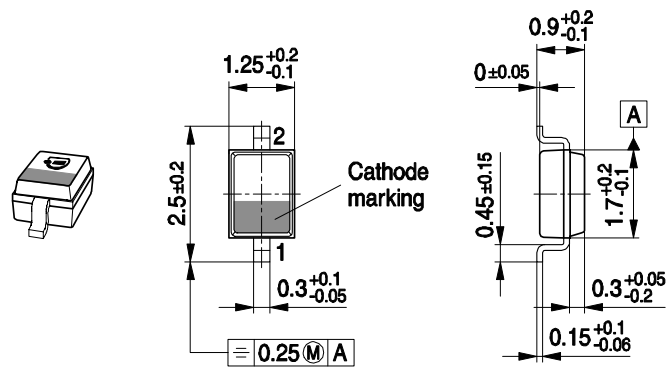


Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 180 mm = 8.000 Pieces/Reel (2 mm Pitch)
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



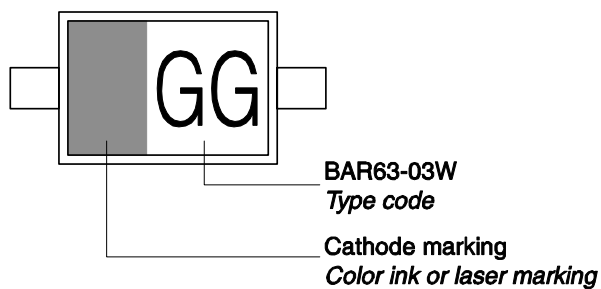
Package Outline



Foot Print

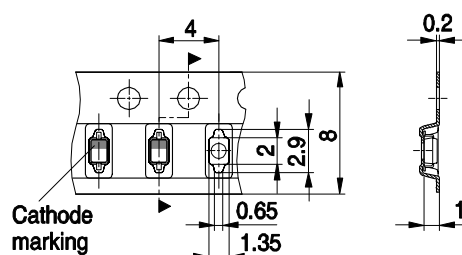


Marking Layout (Example)



Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



Package Outline

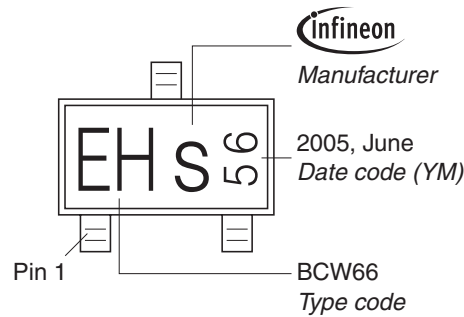


1) Lead width can be 0.6 max. in dambar area

Foot Print



Marking Layout (Example)



Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



Package Outline



Foot Print



Marking Layout (Example)



Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel



Package Outline



Foot Print



Marking Layout (Example)

Small variations in positioning of Date code, Type code and Manufacture are possible.



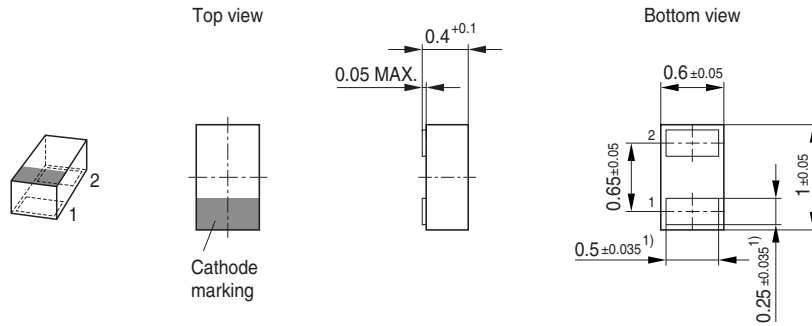
Standard Packing

Reel \varnothing 180 mm = 3.000 Pieces/Reel
 Reel \varnothing 330 mm = 10.000 Pieces/Reel

For symmetric types no defined Pin 1 orientation in reel.



Package Outline



1) Dimension applies to plated terminal

Foot Print

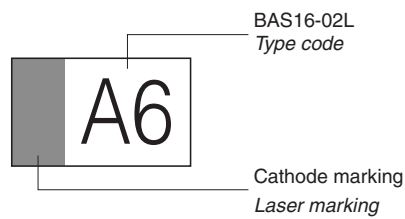
For board assembly information please refer to Infineon website "Packages"



■ Copper □ Solder mask

▨ Stencil apertures

Marking Layout (Example)



BAS16-02L
Type code

Cathode marking
Laser marking

Standard Packing

Reel \varnothing 180 mm = 15.000 Pieces/Reel
Reel \varnothing 330 mm = 50.000 Pieces/Reel (optional)

