

High Speed Diode SOT-23

multicompPRO

**RoHS
Compliant**



Description:

Epitaxial medium-speed switching diode with a low leakage current in a small SOT-23 plastic SMD package.

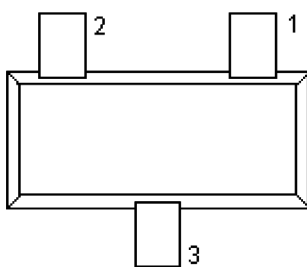
Features:

- Plastic SMD package
- Low leakage current: typical 3pA
- Switching time: typical 0.8μs
- Continuous reverse voltage: maximum 75V
- Repetitive peak reverse voltage: maximum 85V
- Repetitive peak forward current: maximum 500mA

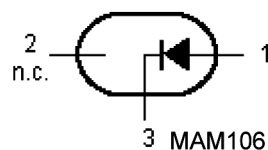
Application:

Low leakage current applications in surface mounted circuits.

Simplified Outline (SOT-23) and Symbol



Top view



Pin	Description
1	Anode
2	Not Connected
3	Cathode

High Speed Diode

SOT-23

multicompPRO

Limiting Values

In accordance with the Absolute Maximum Rating System (IEC 134).

Symbol	Parameter	Conditions	Min.	Max.	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	-	-	85	V
V_R	Continuous Reverse Voltage	-	-	75	
I_F	Continuous Forward Current	Note 1	-	215	mA
I_{FRM}	Repetitive Peak Forward Current	-	-	500	
I_{FSM}	Non-repetitive Peak Forward Current	Square Wave, $T_j = 25^\circ\text{C}$ Prior to Surge $t_p = 1\mu\text{s}$ $t_p = 1\mu\text{s}$ $t_p = 1\text{s}$	-	4 1 0.5	A A A
P_{tot}	Total Power Dissipation	$-T_a = 25^\circ\text{C}$, Note 1	-65	250	mW
T_{stg}	Storage Temperature	-	-	+150	$^\circ\text{C}$
T_j	Junction Temperature	-	-	150	

Note: 1. Device mounted on a FR4 printed-circuit board.

Electrical Characteristics ($T_j = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Max.	Unit
V_F	Forward Voltage	$I_F = 1\text{mA}$	-	0.9	V
		$I_F = 10\text{mA}$	-	1	V
		$I_F = 50\text{mA}$	-	1.1	V
		$I_F = 150\text{mA}$	-	1.25	V
I_R	Reverse Current	$V_R = 75\text{V}$ $V_R = 75\text{V}; T_j = 150^\circ\text{C}$	0.003 3	5 80	nA nA
C_d	Diode Capacitance	$f = 1\text{MHz}$, $V_R = 0$	3	-	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 $I_R = 1\text{mA}$	0.8	3	μs

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	

Note: 1. Device mounted on a FR4 printed-circuit board.

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
Element14.com/multicomp-pro

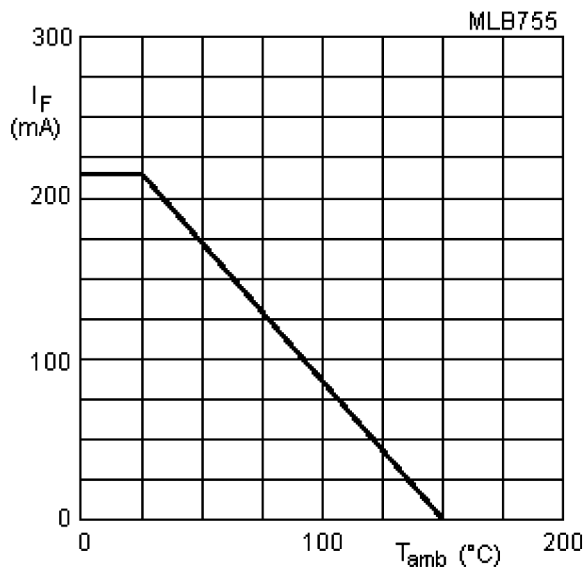
multicompPRO

High Speed Diode SOT-23

multicompPRO

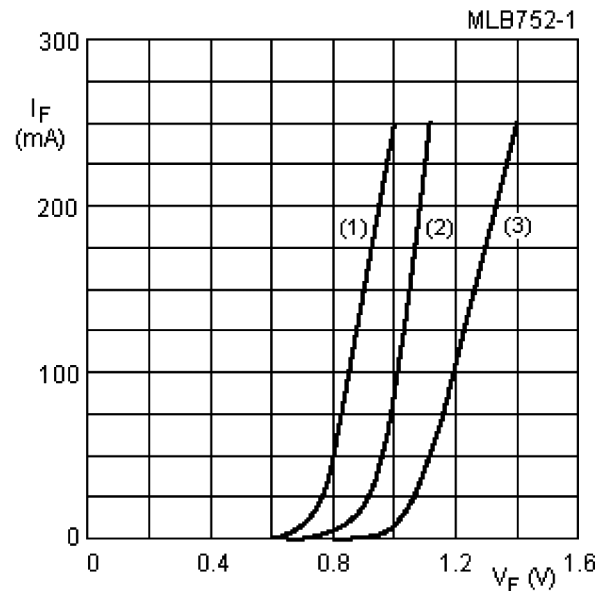
Graphical Data

Maximum Permissible Continuous Forward Current
as a Function of Ambient Temperature



Device Mounted on a FR4 Printed-Circuit Board.

Forward Current as a Function of Forward Voltage

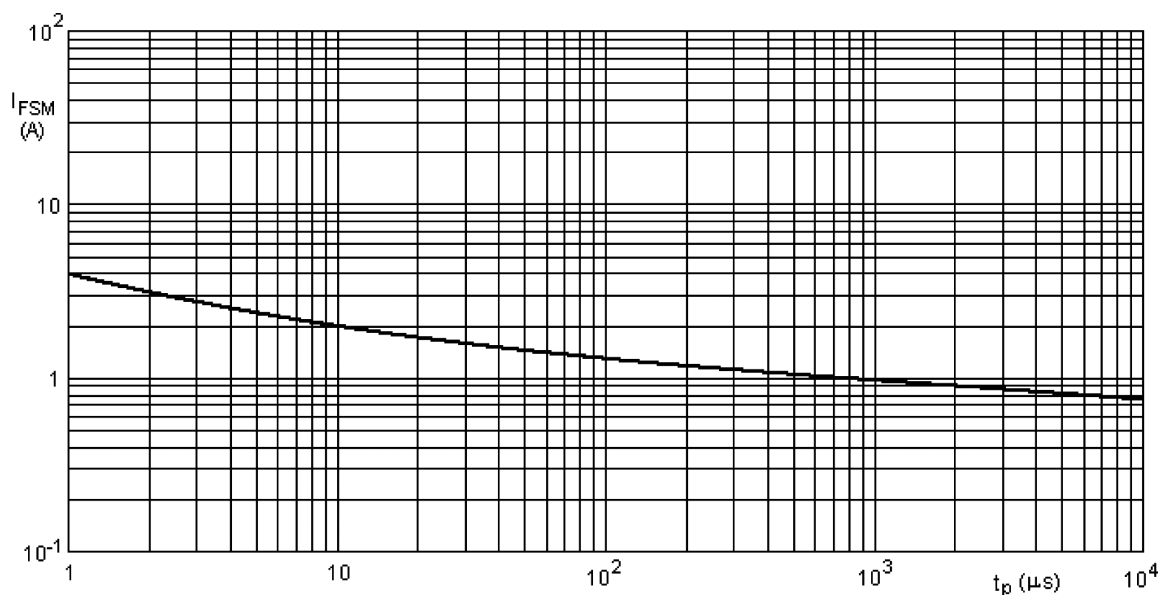


(1) $T_j = 150^\circ\text{C}$; Typical values.

(2) $T_j = 25^\circ\text{C}$; Typical values.

(3) $T_j = 25^\circ\text{C}$; maximum values.

Maximum Permissible Non-Repetitive Peak Forward Current as a Function of Pulse Duration



Based on square wave currents; $T_j = 25^\circ\text{C}$ prior to surge.

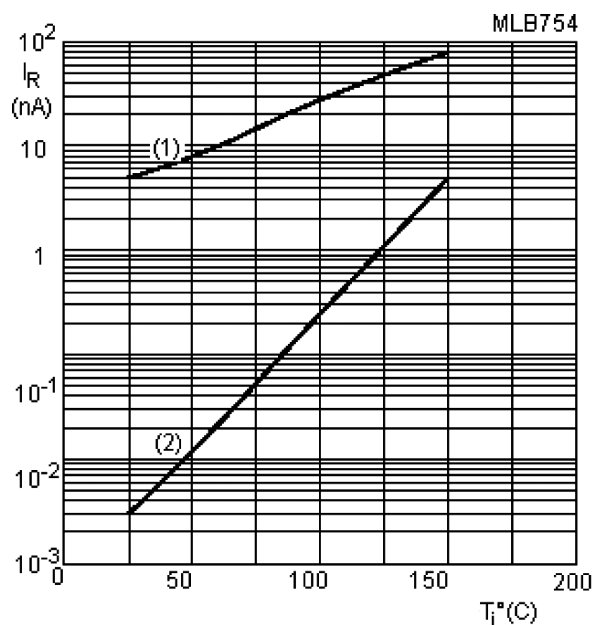
Newark.com/multicomp-pro
Farnell.com/multicomp-pro
Element14.com/multicomp-pro

multicompPRO

High Speed Diode SOT-23

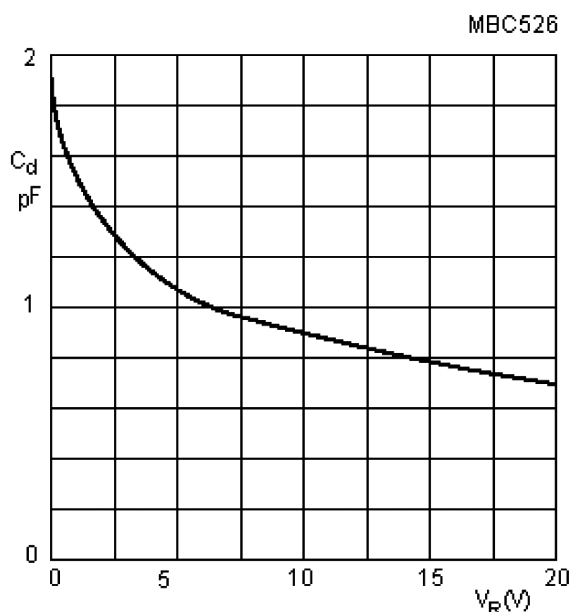
multicompPRO

Reverse Current as a Function of Junction Temperature



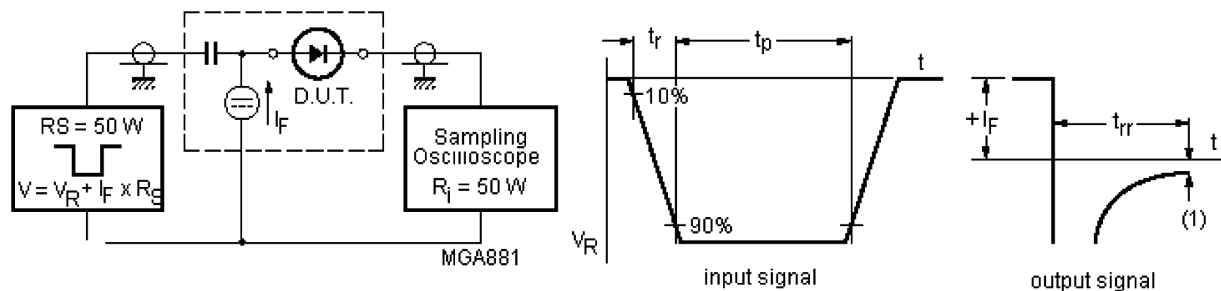
$V_R = 75$ V

Diode Capacitance as a Function of Reverse Voltage; Typical Values



$f = 1$ MHz; $T_j = 25$ °C

Reverse Recovery Time Test Circuit and Waveforms



Part Number Table

Description	Part Number
Diode, High Speed, SOT-23	BAS116+

Important Notice : This data sheet and its contents (the "Information") belong to the members of the AVNET group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp Pro is the registered trademark of Premier Farnell Limited 2019.

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
Element14.com/multicomp-pro

multicompPRO