

## SOT-23 Plastic-Encapsulate Switching Diode

### Features

- 4.0nS; Fast Switching Device (TRR <4.0 nS)
- 225mW; Power Dissipation of 225mW
- High Stability and High Reliability
- Low reverse leakage



Marking: M5C

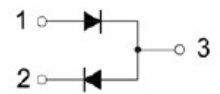
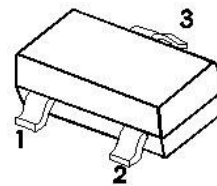
SOT-23

### Mechanical Data

- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any

Pin definition

Equivalent circuit



Maximum Ratings & Electrical Characteristics (T <sub>A</sub> =25°C unless otherwise noted)			
Parameter	Symbol	Value	Unit
Reverse Voltage	V <sub>R</sub>	100	V
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	100	V
Power Dissipation	P <sub>D</sub>	225	mW
Average Rectified Output Current (Notes1,2)	I <sub>O</sub>	200	mA
Non-Repetitive Peak Forward Surge Current @t=8.3ms	I <sub>FSM</sub>	2	A
Operating junction temperature range	T <sub>J</sub>	150	°C
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C
Thermal Resistance from Junction to Ambient	R <sub>θJA</sub>	417	°C/W

Electrical Specifications (T <sub>A</sub> =25°C unless otherwise noted)					
Parameter	Symbol	Test Conditions	Limits		Unit
			Min	Max	
Reverse Voltage	V <sub>(BR)</sub>	IR=100uA	100		V
Forward Voltage	V <sub>F</sub>	IF=1mA		0.72	V
		IF=10mA		0.82	V
		IF=100mA		1.10	V
Reverse Leakage Current	I <sub>R</sub>	VR=100V		3.0	uA
		VR=50V		1	uA
Capacitance	C <sub>J</sub>	VR=0V, f=1MHZ		1.5	pF
Typical reverse recovery time	T <sub>RR</sub>	IF=IR=10mA VR=6V, RL=100Ω IRR=0.1 X IR		4	nS

## Ratings and Characteristics Curves

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Fig.1 Typical Forward Characteristics

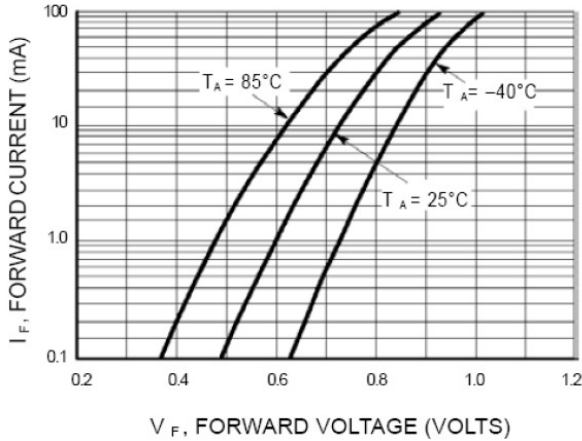


Fig.2 Typical Reverse Characteristics

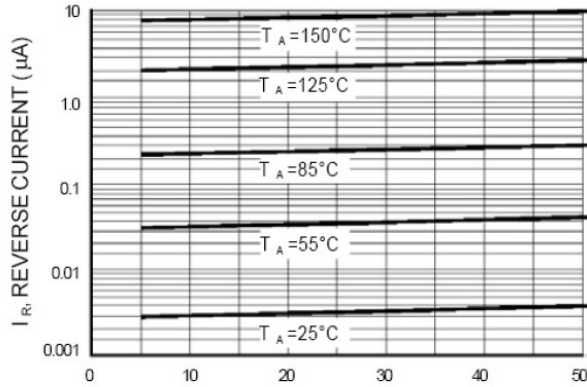
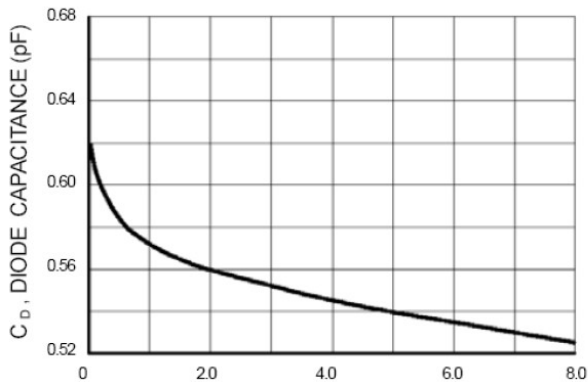
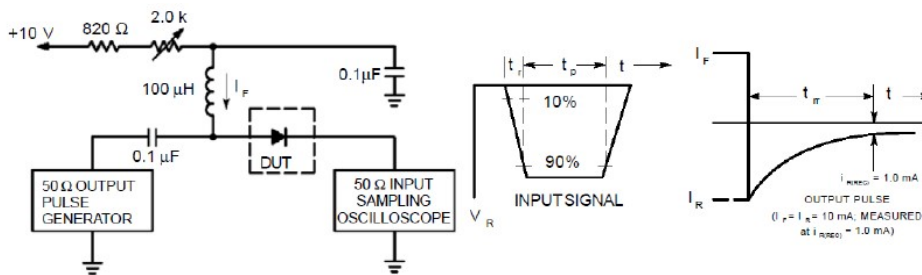


Fig.3 Typical Capacitance Characteristics



## Recovery Time Equivalent Test Circuit

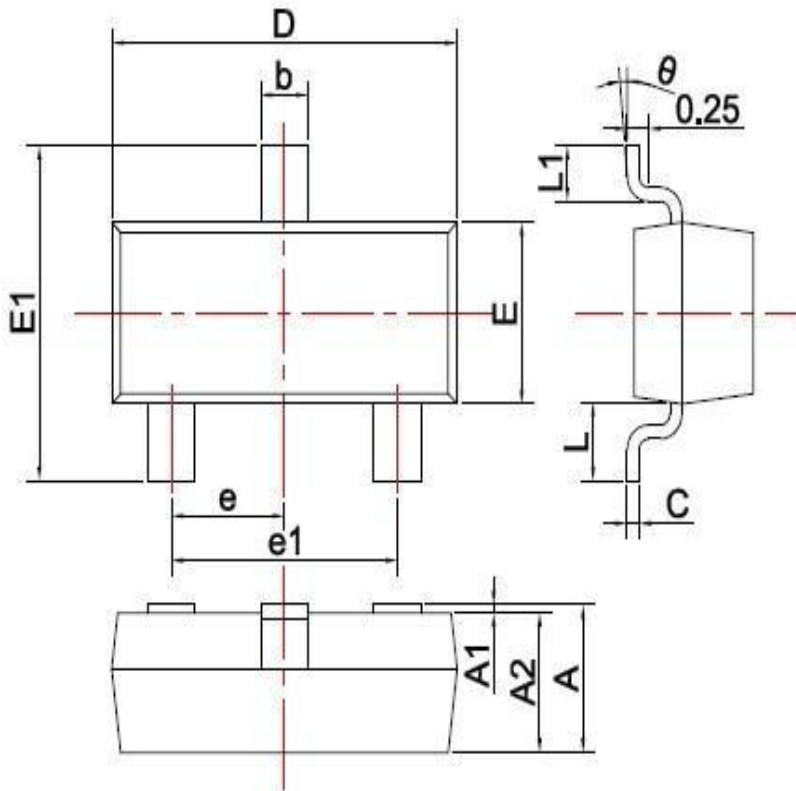


- Notes: 1. A 2.0 k $\Omega$  variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10mA.  
 3.  $t_p \gg t_{rr}$

### Recovery Time Equivalent Test Circuit

## Package Outline Dimensions

millimeters



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

## Revision History

Document Version	Date of release	Description of changes
Rev.A	2017.12.01	First issue

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