

Switching Diodes

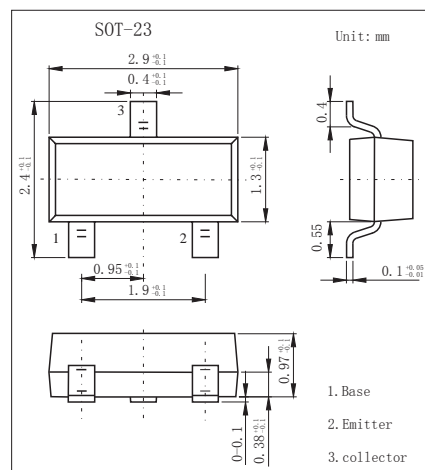
VOLTAGE RANGE: 75V
PEAK PULSE POWER: 250mW

Features

- Small plastic SMD package.
- High switching speed: max. 4 ns.
- Repetitive peak forward current: max. 450 mA.

MECHANICAL DATA

- Case: SOT-23 Small Outline Plastic Package
- Polarity: Color band denotes cathode end
- Mounting Position: Any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Rating	Unit
Repetitive peak reverse voltage	VRRM	85	V
Continuous reverse voltage	VR	75	V
Continuous forward current (single diode loaded *) (double diode loaded *)	IF	215 125	mA
Repetitive peak forward current	IFRM	450	mA
Non-repetitive peak forward current Tj=25 °C t=1 μs	IFSM	4	A
t=1ms		1	
t=1s		0.5	
power dissipation *	PD	250	mW
Thermal resistance from junction to tie-point	Rth j-tp	360	K/W
Thermal resistance from junction to ambient *	Rth j-a	500	K/W
Junction Temperature	Tj	150	°C
Storage Temperature Range	Tstg	-65 to +150	°C

* Device mounted on an FR4 printed-circuit board.

Electrical Specification (TA=25°C unless otherwise specified)

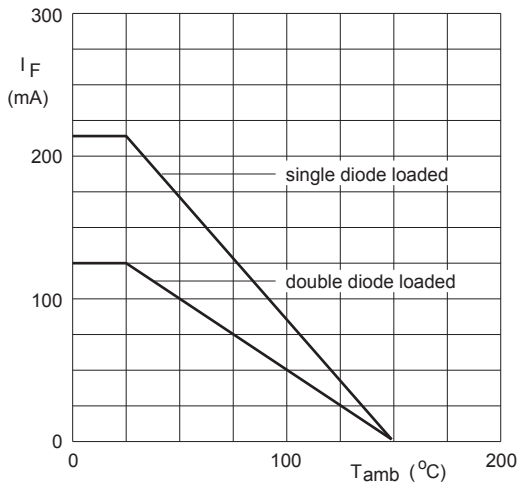
Parameter	Symbol	Test conditions	Max	Unit
Forward voltage	VF	IF = 1 mA	715	mV
		IF = 10 mA	855	mV
		IF = 50 mA	1	V
		IF = 150 mA	1.25	V
Reverse current	IR	VR = 75 V	1	μA
		VR = 25 V; Tj = 150 °C	30	
		VR = 75 V; Tj = 150 °C	50	
Diode capacitance	Cd	VR = 0 V, f = 1 MHz	1.5	pF
Reverse recovery time	trr	when switched from IF = 10 mA to IR = 10 mA; RL = 100 Ω; measured at IR = 1 mA	4	nS
Forward recovery voltage	Vfr	IF = 10 mA, tr = 20 ns	1.75	V

Marking

Marking	A7
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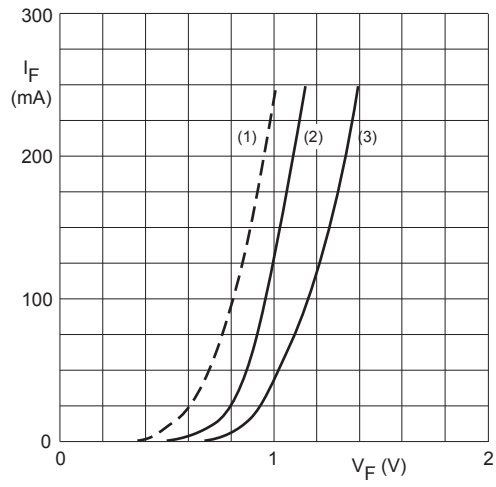
RATINGS AND CHARACTERISTIC CURVES

■ Typical Characteristics



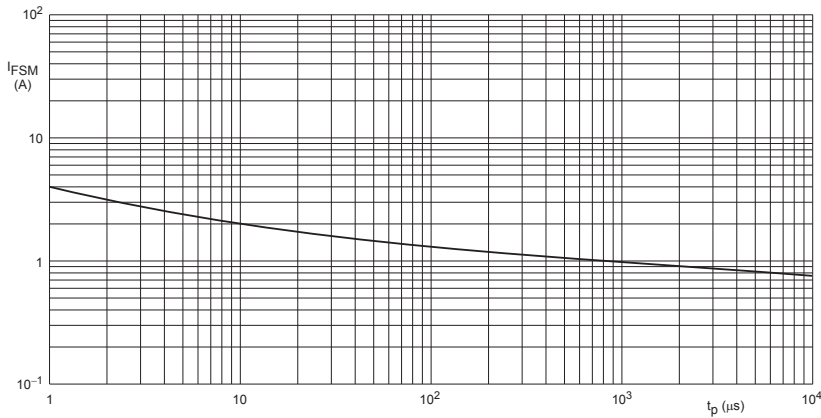
Device mounted on an FR4 printed-circuit board.

Fig.2 Maximum permissible continuous forward current as a function of ambient temperature.



- (1) $T_j = 150\text{ }^\circ\text{C}$; typical values.
- (2) $T_j = 25\text{ }^\circ\text{C}$; typical values.
- (3) $T_j = 25\text{ }^\circ\text{C}$; maximum values.

Fig.3 Forward current as a function of forward voltage.



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

Fig.4 Maximum permissible non-repetitive peak forward current as a function of pulse duration.

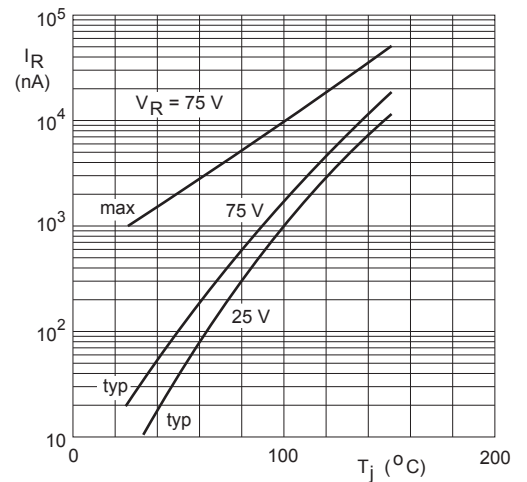
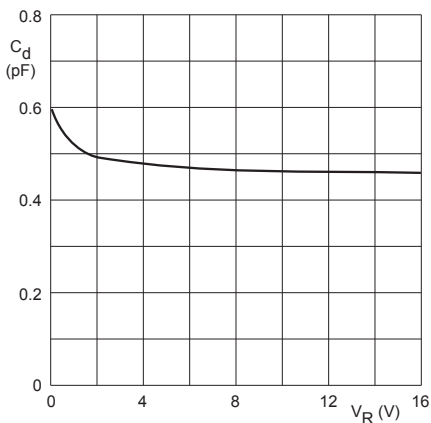


Fig.5 Reverse current as a function of junction temperature.



$f = 1\text{ MHz}$; $T_j = 25\text{ }^\circ\text{C}$.

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