

FEATURES

- Ultra small plastic SMD package
- High continuous reverse voltage: 300V
- Repetitive peak forward current: 250 mA
- High switching speed: max. 50ns



SOD-523



Top View

APPLICATIONS

- High speed switching.
- High voltage switching.

MAXIMUM RATING @ Ta=25°C unless otherwise specified

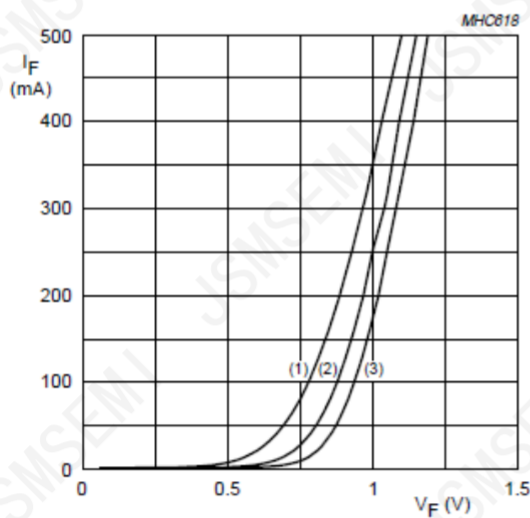
Parameter	Symbol	Limits	Unit
Repetitive peak reverse voltage	V_{RRM}	300	V
Continuous reverse voltage	V_R	300	V
Continuous forward current $T_s \leq 90^\circ\text{C}$; Note 1	I_F	250	mA
Repetitive forward current $t_p=1\text{ms}$	I_{FRM}	1	A
Non-repetitive peak forward surge current $t_p=1\text{ms}$; square wave; $T_j=25^\circ\text{C}$ prior to surge	I_{FSM}	4.5	A
Total power dissipation $T_s \leq 90^\circ\text{C}$; Note 1	P_{tot}	500	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage And operating ambient temperature	T_{stg}, T_{amb}	-65 to +150	$^\circ\text{C}$

Note

1. T_s is the temperature at the soldering point of the cathode tab.

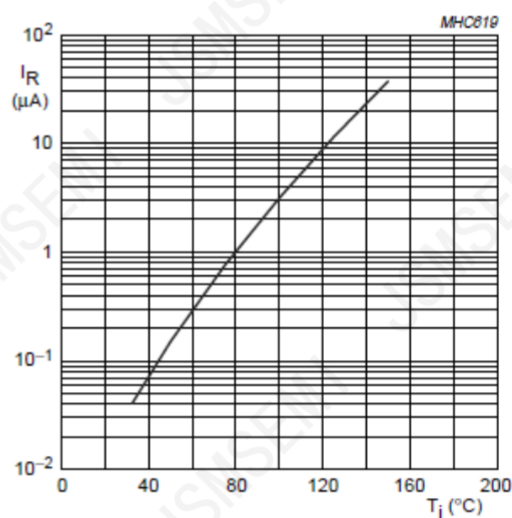
ELECTRICAL CHARACTERISTICS @ $T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
breakdown voltage	V_{BR}	$I_R=100\mu\text{A}$	300	340		V
Forward voltage	V_F	$I_F=100\text{mA}$		0.95	1.1	V
Reverse current	I_R	$V_R=250\text{V}$		30	150	nA
		$V_R=250\text{V}, T_J=150^{\circ}\text{C}$		40	100	μA
Diode capacitance	C_d	$V_R=0, f=1\text{MHz}$		0.4	5	pF
Reverse recovery time	t_{rr}	when switched from $I_F=30\text{mA}$ to $I_R=30\text{mA}$; $R_L=100\Omega$; measured at $I_R=3\text{mA}$		16	50	ns

TYPICAL CHARACTERISTICS @ $T_a=25^{\circ}\text{C}$ unless otherwise specified


- (1) $T_{amb} = 150^{\circ}\text{C}$.
 (2) $T_{amb} = 75^{\circ}\text{C}$.
 (3) $T_{amb} = 25^{\circ}\text{C}$.

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



$V_R = V_{Rmax}$; typical values.

Fig 2 Reverse current as a function of junction temperature.

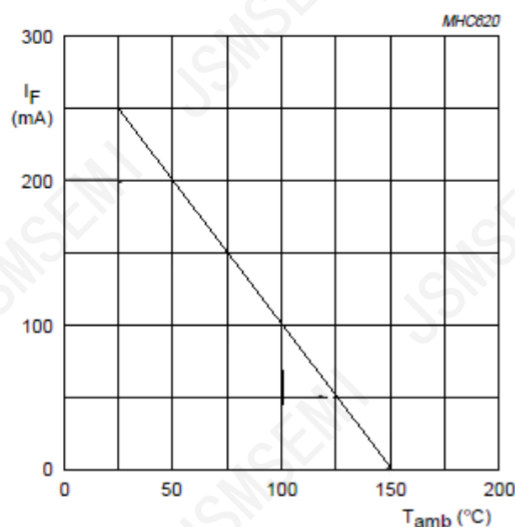


Fig 3 Maximum permissible continuous forward current as a function of ambient temperature.

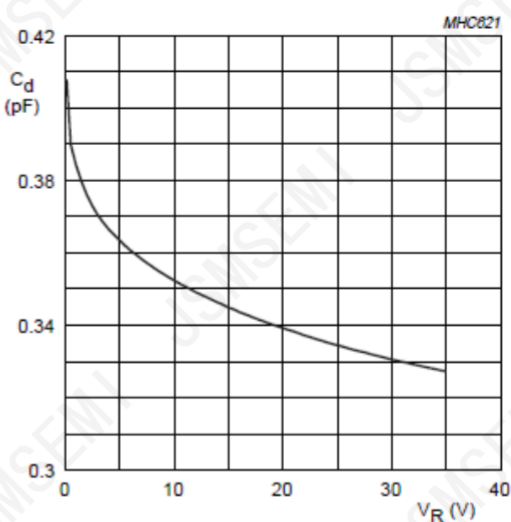
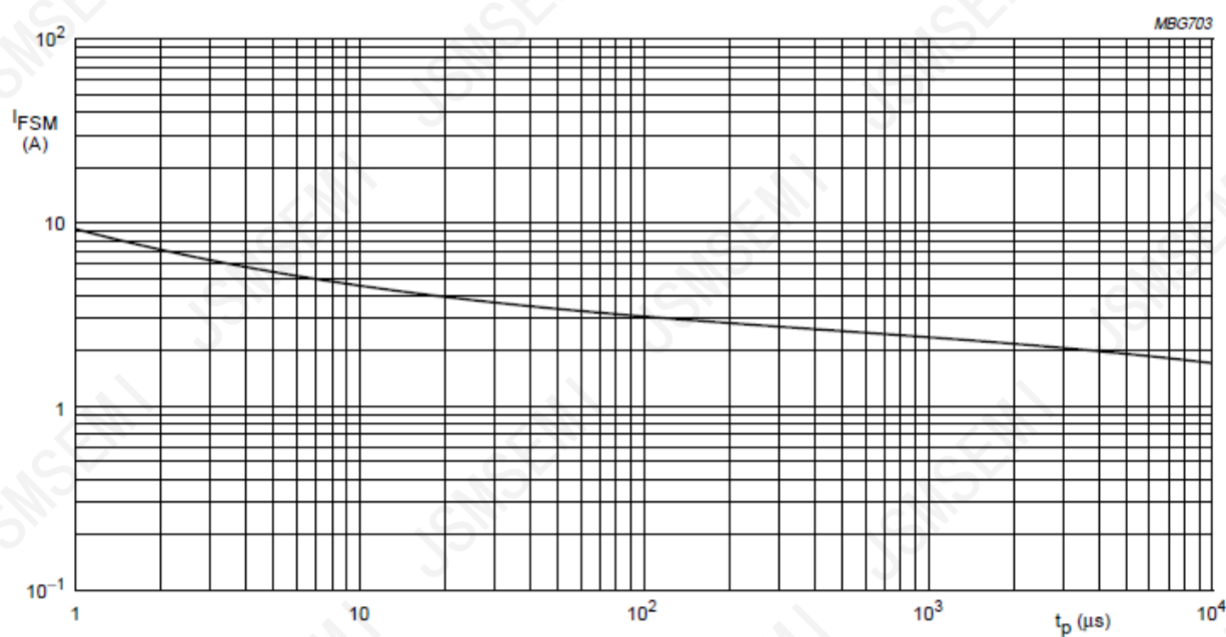


Fig 4 Diode capacitance as a function of reverse voltage; typical values.



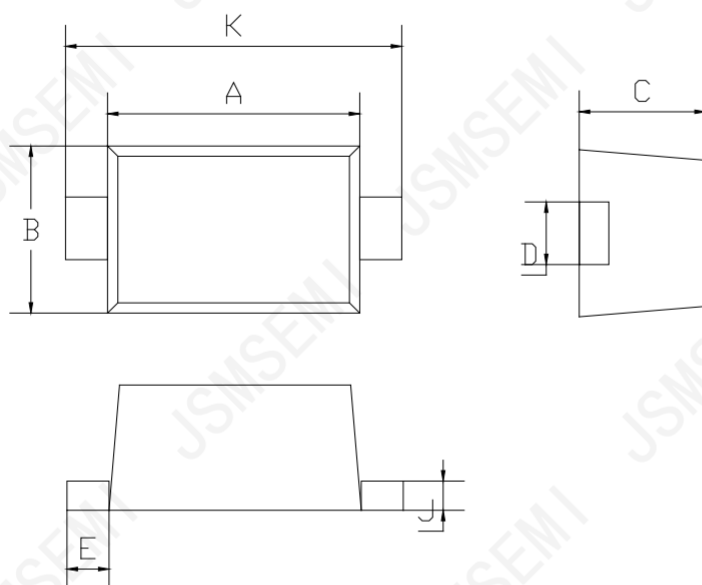
Based on square wave currents.
 $T_j = 25^\circ\text{C}$ prior to surge.

Fig 5 Maximum permissible non-repetitive peak forward current as a function of pulse duration.

PACKAGE OUTLINE

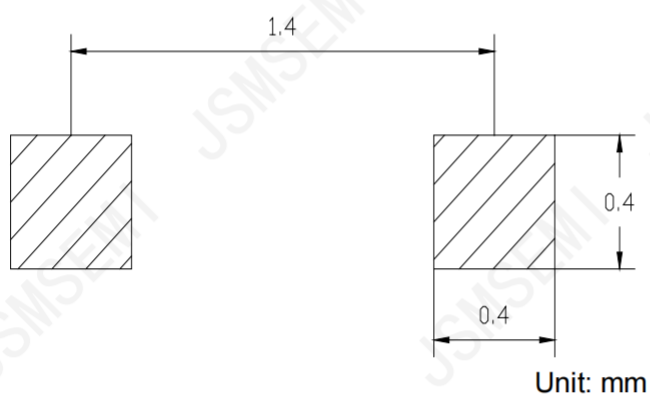
Plastic surface mounted package

SOD-523



SOD-523		
Dim	Min	Max
A	1.10	1.30
B	0.70	0.90
C	0.50	0.70
D	0.25	0.35
E	0.15	0.25
J	0.05	0.15
K	1.50	1.70
All Dimensions in mm		

SOLDERING FOOTPRINT



Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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