

FEATURES

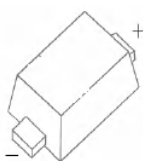
Ultra small plastic SMD package
High continuous reverse voltage: 300V
Repetitive peak forward current: 250 mA
High switching speed: max. 50ns

APPLICATION

High speed switching.
High voltage switching.

VOLTAGE RANGE
300 Volts
CURRENT
250mA

L4



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings ($T_a = 25\text{ }^{\circ}\text{C}$)

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	$^{\circ}\text{C}$

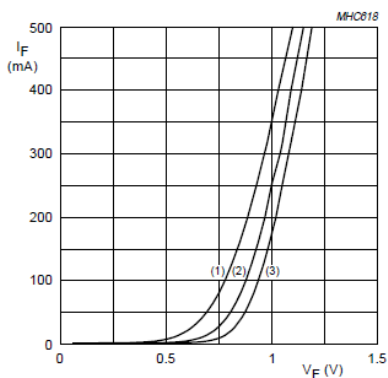
Note

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

Electrical Characteristics

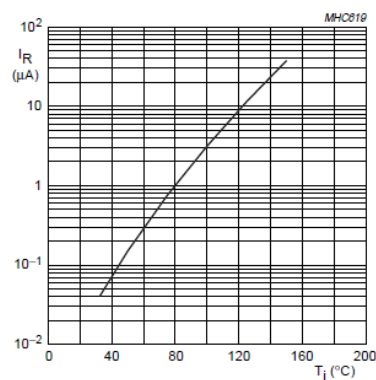
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
breakdown voltage	V_{BR}	$I_R=100\mu A$	300	340		V
Forward voltage	V_F	$I_F=100mA$		0.95	1.1	V
Reverse current	I_R	$V_R=250V$		30	150	nA
		$V_R=250V, T_J=150\text{ }^{\circ}C$		40	100	μA
Diode capacitance	C_d	$V_R=0, f=1MHz$		0.4	5	pF
Reverse recovery time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

RATING AND CHARACTERISTIC CURVES



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

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.

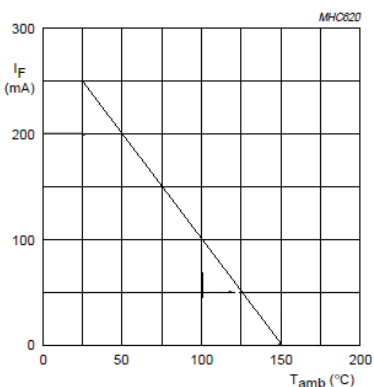


Fig 3 Maximum permissible continuous forward current as a function of ambient temperature.

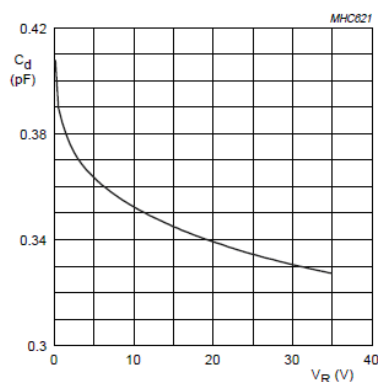
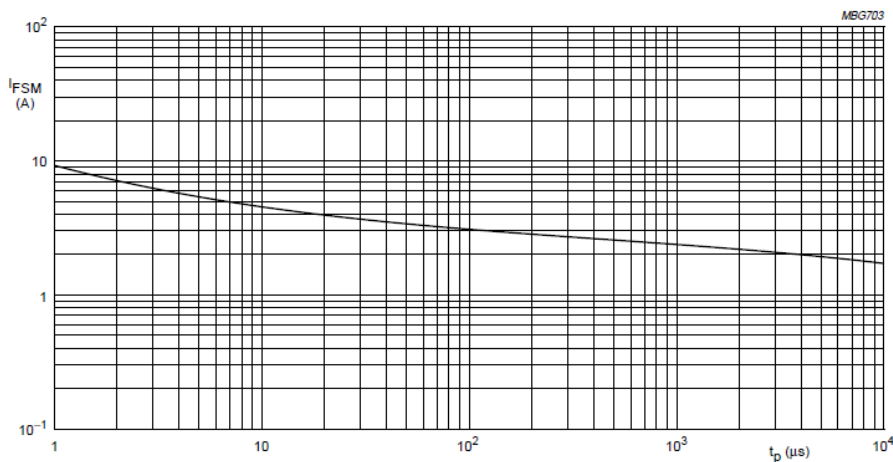


Fig 4 Diode capacitance as a function of reverse voltage; typical values.

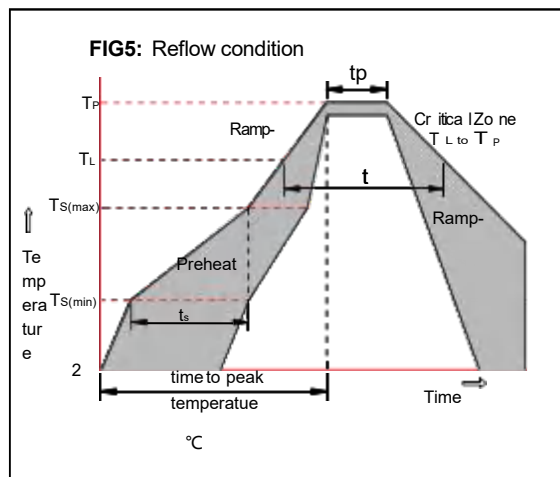


Based on square wave currents.
 $T_j = 25\text{ }^{\circ}\text{C}$ prior to surge.

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

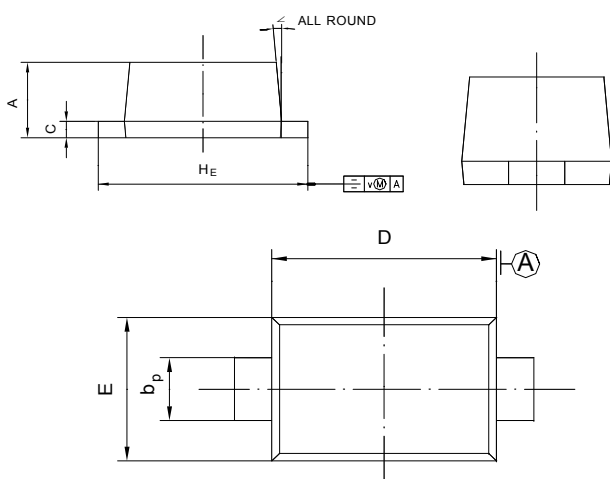
Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

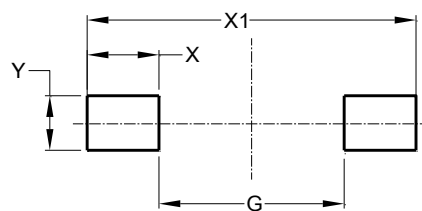


Package Dimensions & Suggested Pad Layout

SOD523



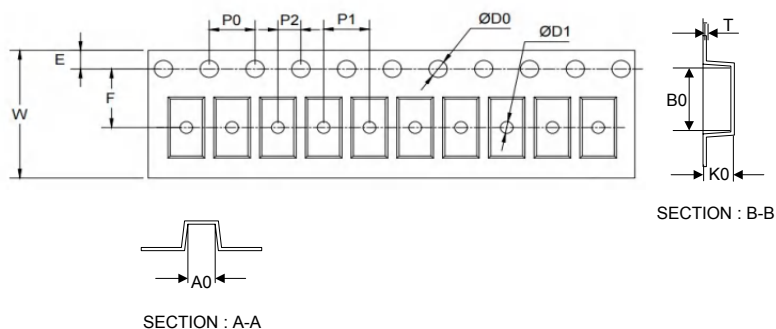
UNIT	A	b _p	C	D	E	H _E	V	∠
mm	0.70 0.50	0.40 0.20	0.14 0.05	1.30 1.10	0.90 0.75	1.70 1.50	0.1	5°



Dimensions	Value (in mm)
G	0.85
X	0.70
X1	2.25
Y	0.80

Tape & reel specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	2.00±0.20
P2	2.00±0.20
D0	1.55±0.20
D1	0.50±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	1.30±0.20
B0	2.35±0.20
K0	0.95±0.20
T	0.20±0.20
D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0
Quantity: 3000PCS	

7" Reel

