

SMALL SIGNAL SCHOTTKY DIODE

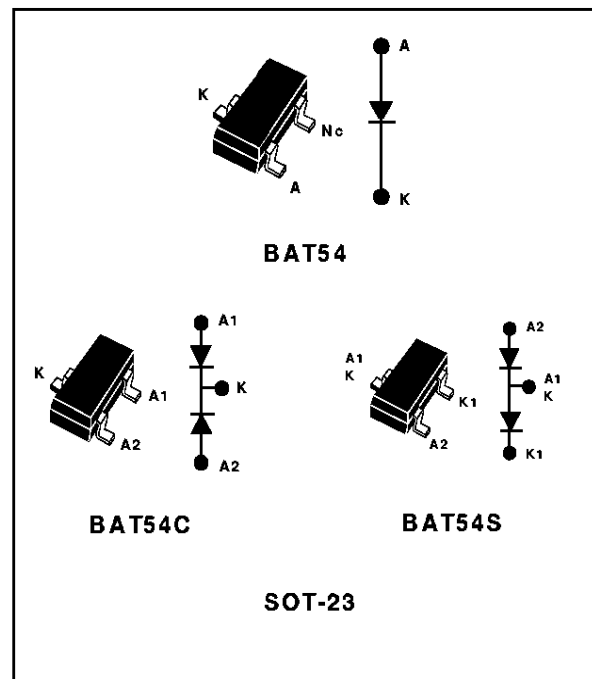
FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- EXTREMELY FAST SWITCHING
- SURFACE MOUNT DEVICE

DESCRIPTION

Schottky barrier diode encapsulated in a SOT-23 small SMD package.

Single and double diodes with different pinning are available.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive peak reverse voltage	30	V
I_F	Repetitive peak forward current (note 1)	0.5	A
I_{FSM}	Surge non repetitive forward current	1	A
P_{tot}	Power dissipation (note 2)	250	mW
T_{stg}	Maximum storage temperature range	- 55 to +150	°C
T_j	Maximum junction temperature	125	

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction to ambient (*)	400	°C/W

(*) Mounted on ceramic substrate: 7 x 5 x 0.5 mm

Note 1: $\delta = 0.33$

Note 2: for double diodes, P_{tot} is the total dissipation of both diodes

BAT54 Series

STATIC ELECTRICAL CHARACTERISTICS (per diode for double types)

Symbol	Tests Conditions	Tests Conditions	Min.	Typ.	Max.	Unit
V_F	Forward Voltage drop	$T_{amb} = 25^\circ\text{C}$ $I_F = 0.1\text{ mA}$ $I_F = 1\text{ mA}$ $I_F = 10\text{ mA}$ $I_F = 30\text{ mA}$ $I_F = 100\text{ mA}$			240	mV
					320	
					400	
					500	
					900	
I_R	Continuous Reverse Current	$T_{amb} = 25^\circ\text{C}$	$V_R = 30\text{ V}$		1	μA
		$T_{amb} = 100^\circ\text{C}$			100	

DYNAMIC CHARACTERISTICS ($T_j = 25^\circ\text{C}$)

Symbol	Parameters	Tests Conditions	Min.	Typ.	Max.	Unit
C	Junction Capacitance	$T_{amb} = 25^\circ\text{C}$ $V_R = 1\text{ V}$ $f = 1\text{ MHz}$			10	pF
t_{rr}	Reverse Recovery Time	$I_F = 10\text{ mA}$ $I_{rr} = 10\text{ mA}$ $I_{rr} = 1\text{ mA}$ $R_L = 100\ \Omega$			5	ns

Fig.1 : Average forward power dissipation versus average forward current.

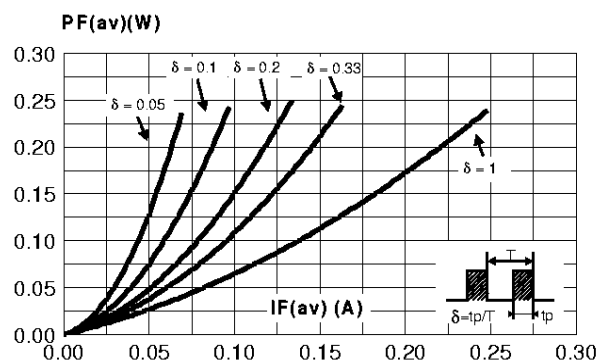


Fig.2 : Average forward current versus ambient temperature ($\delta = 0.33$).

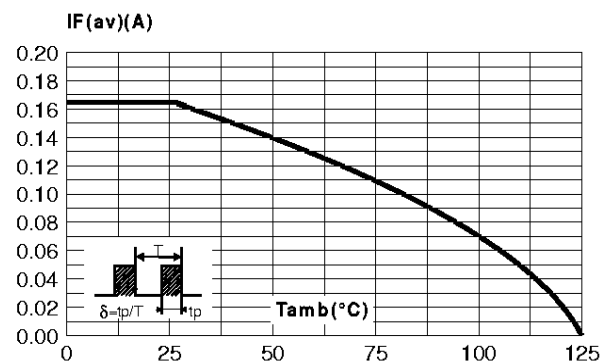


Fig.3 : Non repetitive surge peak forward current versus overload duration (maximum values).

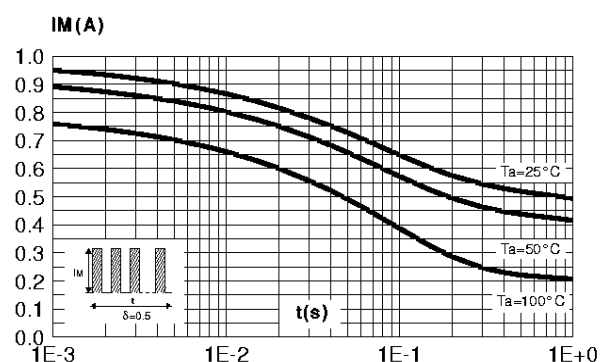


Fig.4 : Relative variation of thermal impedance junction to case versus pulse duration (alumine substrate 10mm x 8mm x 0.5mm).

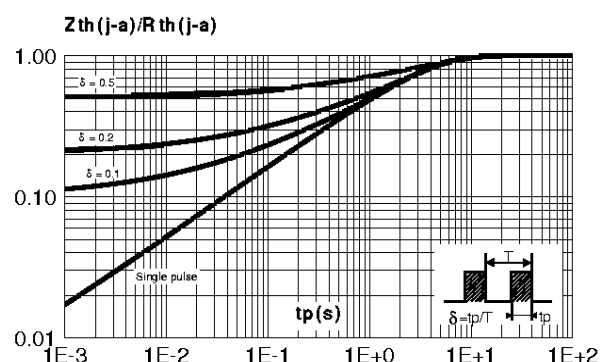


Fig.5 : Reverse leakage current versus reverse voltage applied (typical values).

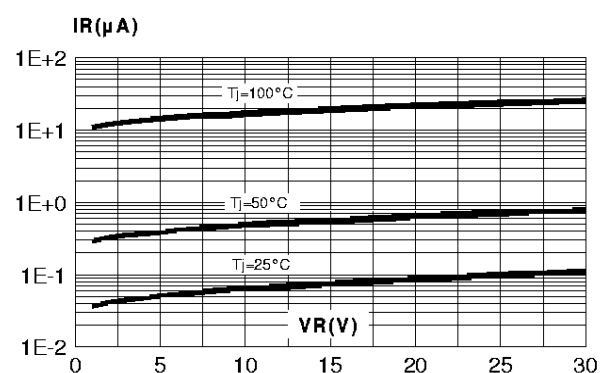


Fig.6 : Junction capacitance versus reverse voltage applied.

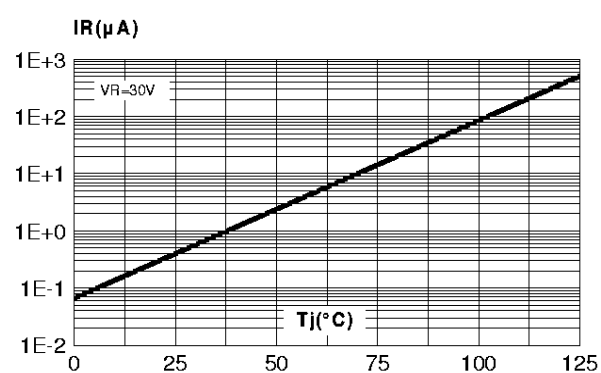


Fig.7 : Junction capacitance versus reverse voltage applied (typical values).

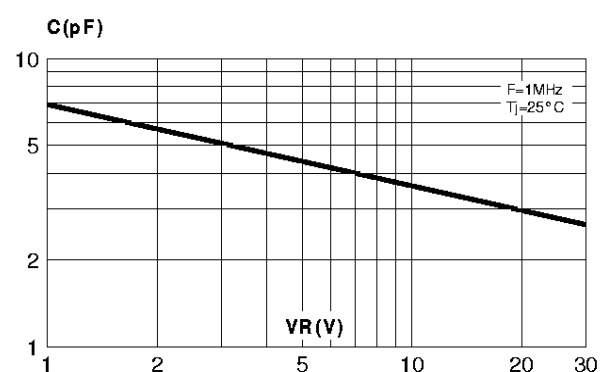
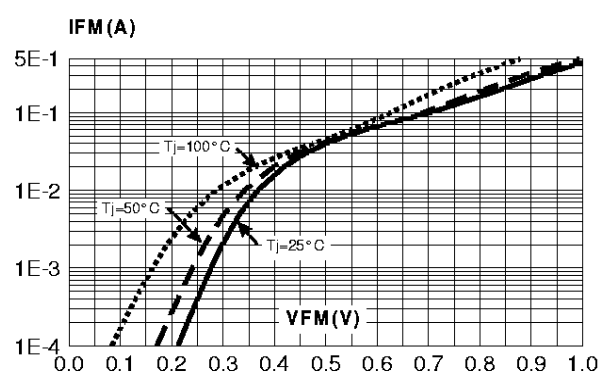
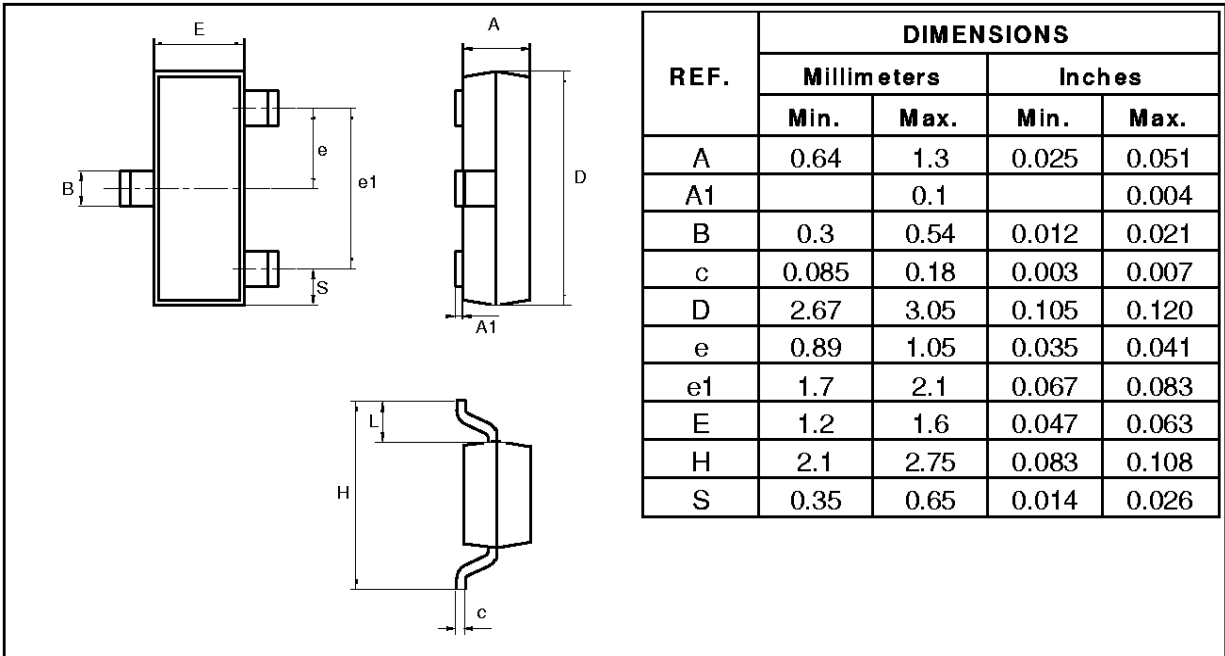


Fig.8 : Forward voltage drop versus forward current (typical values).



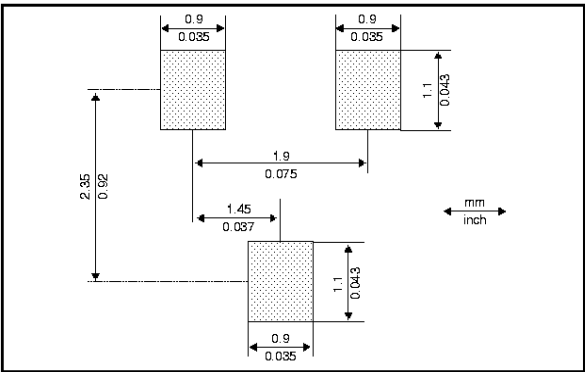
PACKAGE MECHANICAL DATA
SOT-23



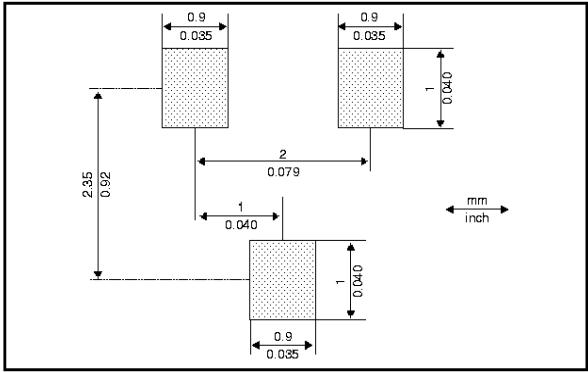
MARKING

Type	BAT54	BAT54C	BAT54S
Marking	D86	D87	D88

FOOTPRINT DIMENSIONS
COMPATIBLE SOT-23 / SC-59
(in millimeters and inches)



OPTIMIZED SOT-23 FOOTPRINT DIMENSIONS
(in millimeters and inches)



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