

BAT750

SOT23 Schottky barrier diode

Summary

$V_R = 40V$

$I_F = 750mA$

$V_F < 490mV @ 750mA$



Description

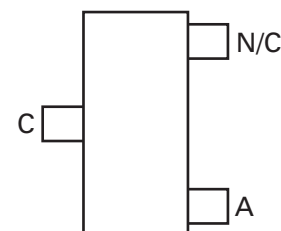
A high current Schottky barrier diode in a small outline surface mount package for applications where space is limited.

Features

- Low V_F
- High current capability
- SOT23 package

Applications

- DC-DC converters
- Mobile telecoms
- PCMIA



Top view

Ordering information

Device	Reel size (inches)	Tape width (mm)	Quantity per reel
BAT750TA	7	8	3000

Device marking

1G1

Absolute maximum ratings

Parameter	Symbol	Limit	Unit
Collector reverse voltage	V_R	40	V
RMS reverse voltage	$V_{R(RMS)}$	28	V
Forward current (continuous)	I_F	750	mA
Forward voltage @ $I_F = 750\text{mA}$	V_F	490	mV
Average peak forward current; DC = 50%	I_{FAV}	1500	mA
Non repetitive forward current $t \leq 100\mu\text{S}$ $t \leq 8.3\text{ms}$	I_{FSM}	12 5.5	A
Power dissipation @ $T_{amb} = 25^\circ\text{C}$	P_{tot}	350	mW
Typical thermal resistance, junction to ambient air	$R_{\theta JA}$	286	$^\circ\text{C/W}$
Storage temperature range	T_{stg}	-55 to +150	$^\circ\text{C}$
Junction temperature	T_j	125	$^\circ\text{C}$

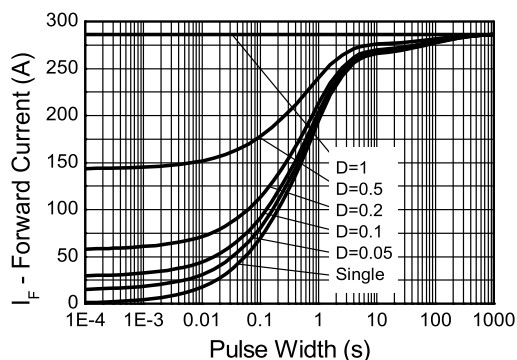
Electrical characteristics (@ $T_{amb} = 25^\circ\text{C}$ unless otherwise stated)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Reverse breakdown voltage	$V_{(BR)R}$	40	60		V	$I_R = 300\mu\text{A}$
Forward voltage	V_F		225 235 290 340 390 440 530	280 310 350 420 490 540 650	mV mV mV mV mV mV mV	$I_F = 50\text{mA}^{(*)}$ $I_F = 100\text{mA}^{(*)}$ $I_F = 250\text{mA}^{(*)}$ $I_F = 500\text{mA}^{(*)}$ $I_F = 750\text{mA}^{(*)}$ $I_F = 1000\text{mA}^{(*)}$ $I_F = 1500\text{mA}^{(*)}$
Reverse current	I_R		50	100	μA	$V_R = 30\text{V}$
Diode capacitance	C_D		25	-	pF	$V_R = 25\text{V}$, $f = 1.0\text{MHz}$
Reverse recovery time	t_{rr}		5	-	ns	$I_F = I_R = 100\text{mA}$, $I_{rr} = 10\text{mA}$

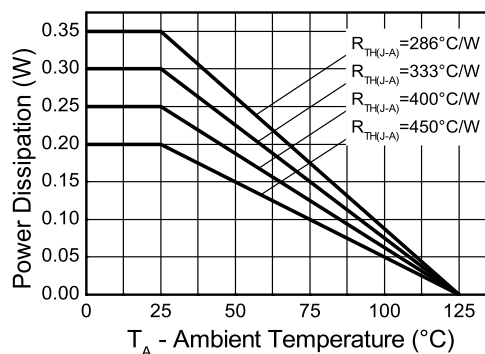
NOTES:

(*) Measured under pulsed conditions. Pulse width = $300\mu\text{s}$ duty cycle $\leq 2\%$.

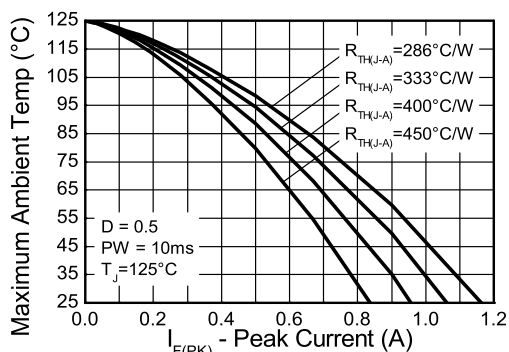
Thermal data



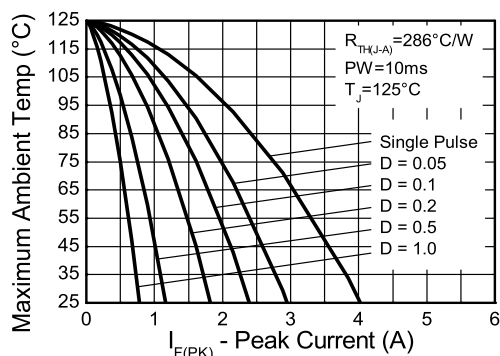
Transient Thermal Impedance



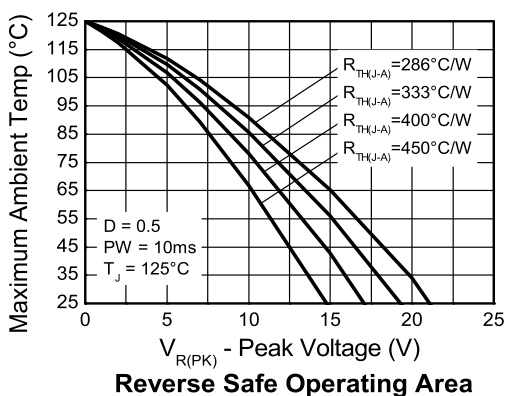
Derating Curves



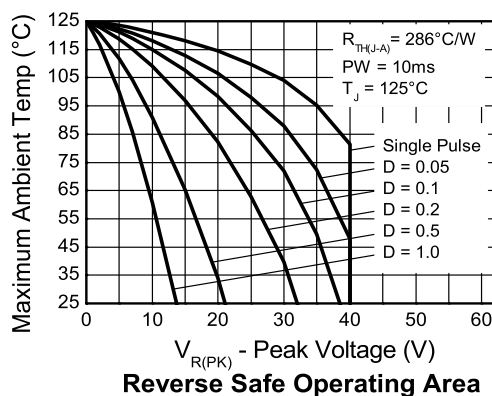
Forward Safe Operating Area



Forward Safe Operating Area

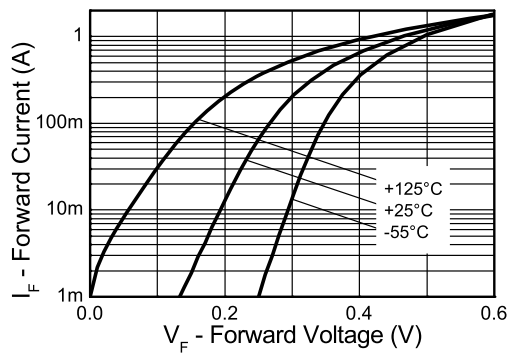


Reverse Safe Operating Area

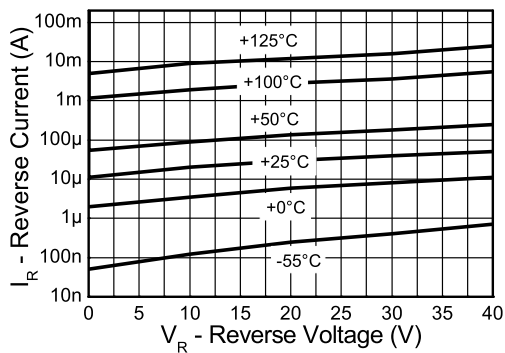


Reverse Safe Operating Area

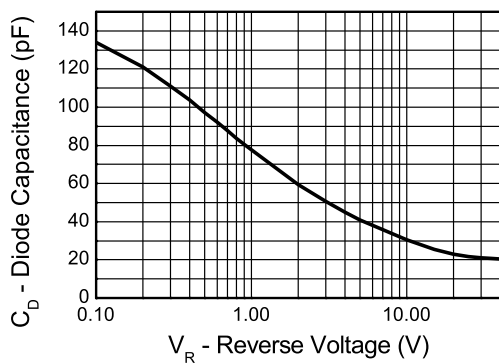
Typical characteristics



Typical Forward Characteristics

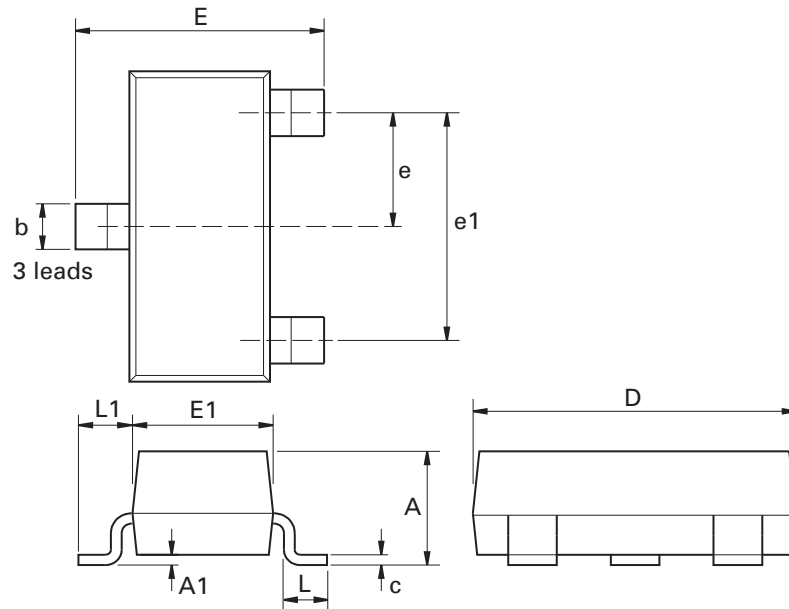


Typical Reverse Characteristics



Capacitance v Reverse Voltage

Package outline - SOT23



Dim.	Millimeters		Inches		Dim.	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Max.	Max.
A	-	1.12	-	0.044	e1	1.90 NOM		0.075 NOM	
A1	0.01	0.10	0.0004	0.004	E	2.10	2.64	0.083	0.104
b	0.30	0.50	0.012	0.020	E1	1.20	1.40	0.047	0.055
C	0.085	0.120	0.003	0.008	L	0.25	0.62	0.018	0.024
D	2.80	3.04	0.110	0.120	L1	0.45	0.62	0.018	0.024
e	0.95 NOM		0.0375 NOM		-	-	-	-	-

Note: Controlling dimensions are in millimeters. Approximate dimensions are provided in inches

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