

# BAT750

## SOT23 Schottky barrier diode

### Summary

$V_R = 40V$

$I_F = 750mA$

$V_F < 490mV @ 750mA$



### Description

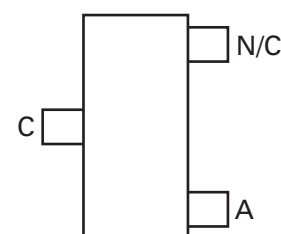
A high current Schottky barrier diode in a small outline surface mount package for applications where space is limited.

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

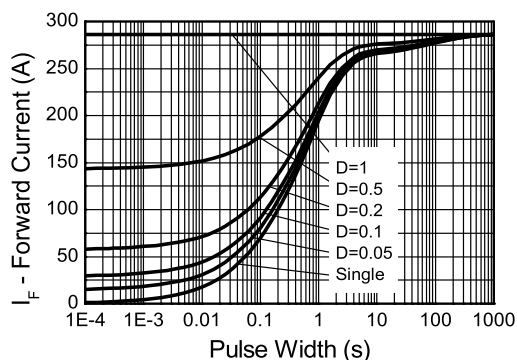
## Electrical characteristics (@ $T_{amb} = 25^\circ\text{C}$ unless otherwise stated)

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	$\mu\text{A}$	$V_R = 30\text{V}$
Diode capacitance	$C_D$		25	-	pF	$V_R = 25\text{V}$ , $f = 1.0\text{MHz}$
Reverse recovery time	$t_{rr}$		5	-	ns	$I_F = I_R = 100\text{mA}$ , $I_{rr} = 10\text{mA}$

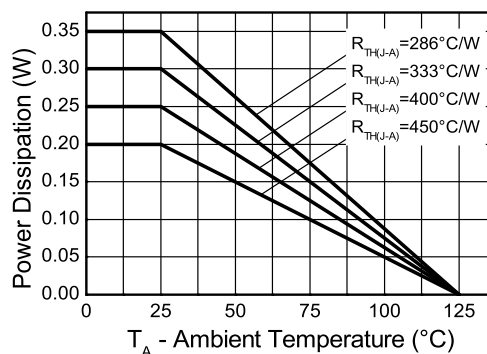
### NOTES:

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

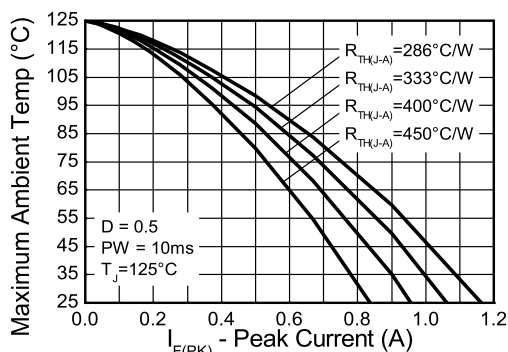
## Thermal data



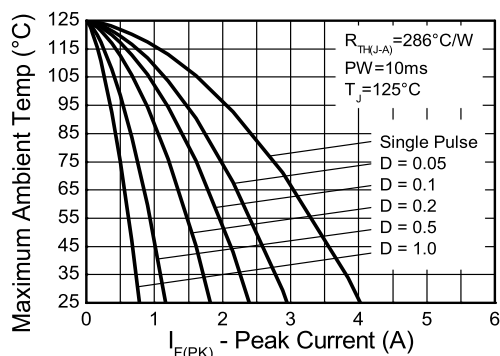
Transient Thermal Impedance



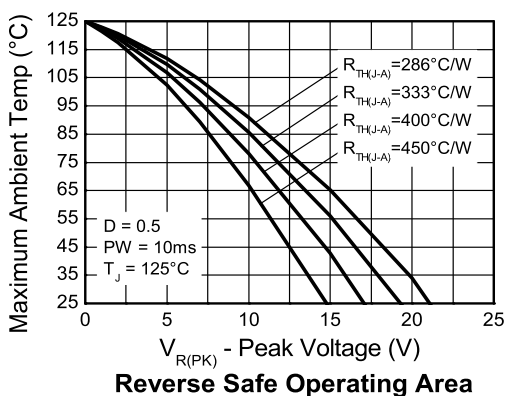
Derating Curves



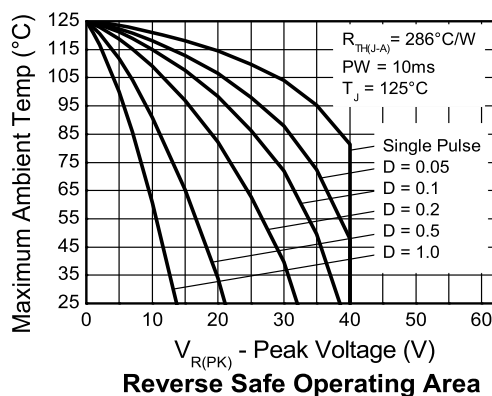
Forward Safe Operating Area



Forward Safe Operating Area

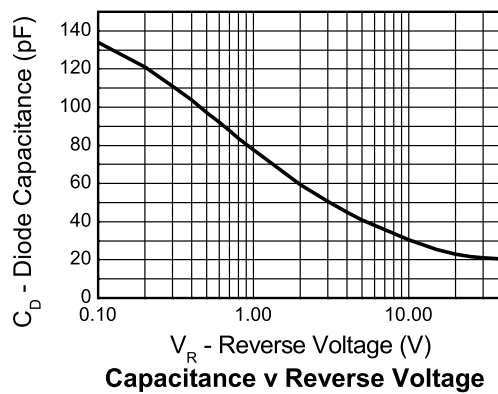
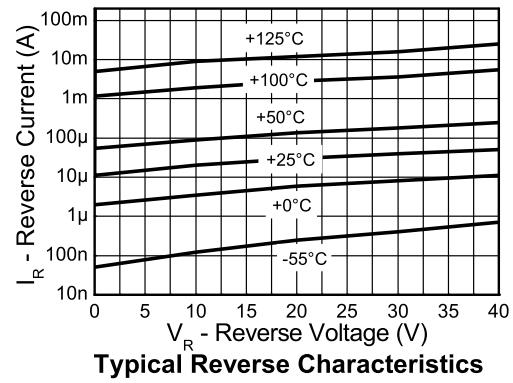
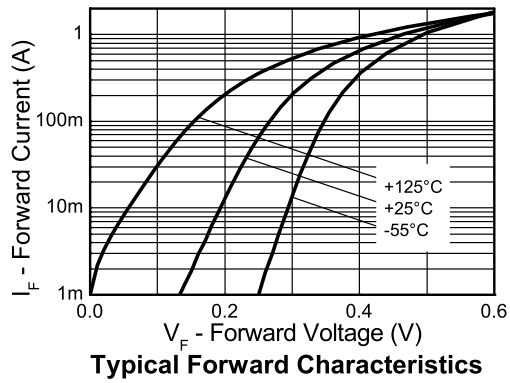


Reverse Safe Operating Area

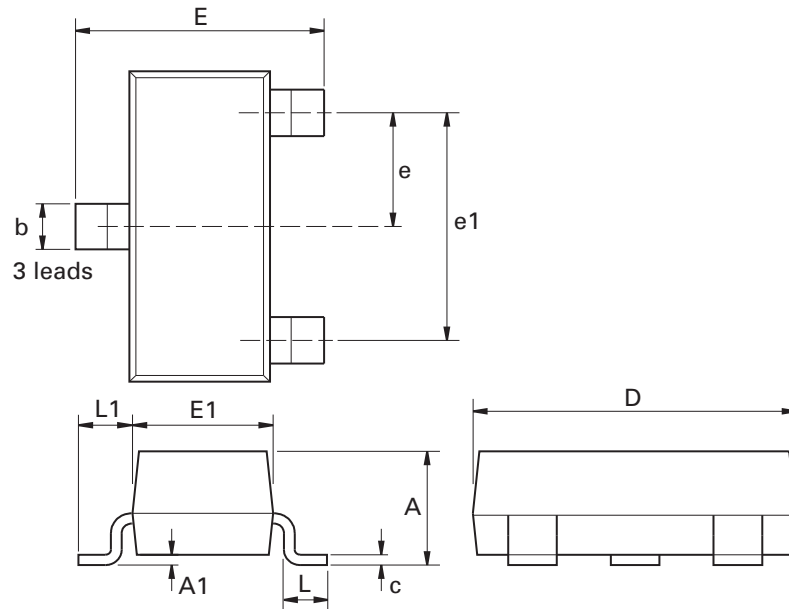


Reverse Safe Operating Area

## Typical characteristics



## 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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