

200mA, 30V Schottky Barrier Diode

FEATURES

- Fast switching speed
- Low forward voltage drop
- Surface mount device type
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

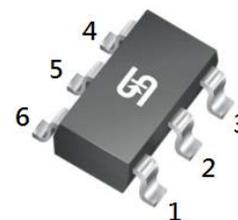
APPLICATIONS

- Voltage clamping
- Reverse polarity protection
- High speed switching

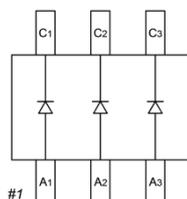
MECHANICAL DATA

- Case: SOT-363
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight: 6.99mg (approximately)

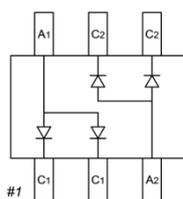
KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	200	mA
V_{RRM}	30	V
I_{FSM}	600	mA
V_F at $I_F = 100\text{mA}$	1	V
$T_{J\text{MAX}}$	150	°C
Package	SOT-363	



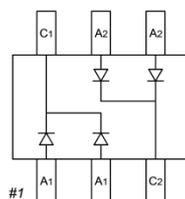
PIN CONFIGURATION



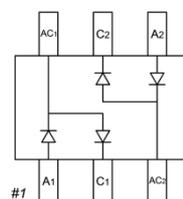
BAT54T



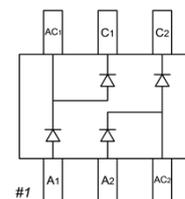
BAT54AD



BAT54CD



BAT54SD



BAT54BR

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	BAT54 T	BAT54 AD	BAT54 CD	BAT54 SD	BAT54 BR	UNIT	
Marking code on the device		KLA	KL6	KL7	KL8	KLB		
Power dissipation	P_D	200						mW
Repetitive peak reverse voltage	V_{RRM}	30						V
Repetitive peak forward current	I_{FRM}	300						mA
Forward current	I_F	200						mA
Non-Repetitive peak forward surge current @ $t < 1.0\text{s}$	I_{FSM}	600						mA
Junction temperature range	T_J	-65 to +150						°C
Storage temperature range	T_{STG}	-65 to +150						°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	625	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 0.1\text{mA}, T_J = 25^\circ\text{C}$	V_F	-	0.24	V
	$I_F = 1\text{mA}, T_J = 25^\circ\text{C}$		-	0.32	V
	$I_F = 10\text{mA}, T_J = 25^\circ\text{C}$		-	0.40	V
	$I_F = 30\text{mA}, T_J = 25^\circ\text{C}$		-	0.50	V
	$I_F = 100\text{mA}, T_J = 25^\circ\text{C}$		-	1.00	V
Reverse voltage	$I_R = 100\mu\text{A}, T_J = 25^\circ\text{C}$	V_R	30	-	V
Reverse current @ rated V_R per diode ⁽²⁾	$V_R = 25\text{V}, T_J = 25^\circ\text{C}$	I_R	-	2	μA
Junction capacitance	1MHz, $V_R = 1\text{V}$	C_T	-	10	pF
Reverse recovery time	$I_F = I_R = 10\text{mA}, R_L = 100\Omega,$ $I_{RR} = 1\text{mA}$	t_{rr}	-	5	ns

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION		
ORDERING CODE	PACKAGE	PACKING
BAT54T RFG	SOT-363	3K / 7" Reel
BAT54AD RFG	SOT-363	3K / 7" Reel
BAT54CD RFG	SOT-363	3K / 7" Reel
BAT54SD RFG	SOT-363	3K / 7" Reel
BAT54BR RFG	SOT-363	3K / 7" Reel

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Typical Forward Characteristics

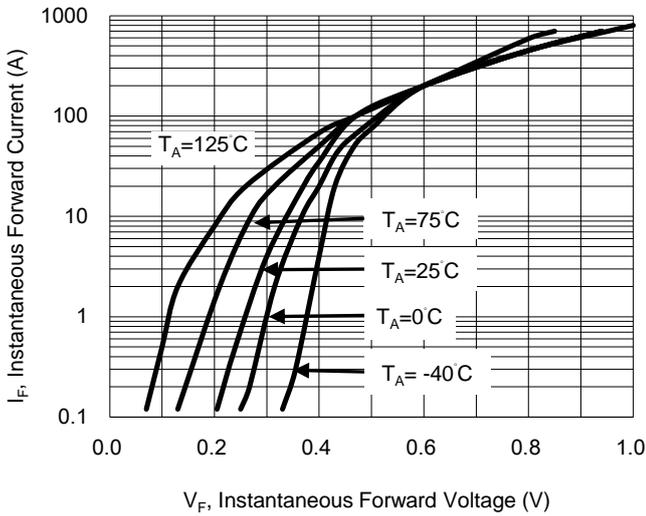


Fig.2 Typical Reverse Characteristics

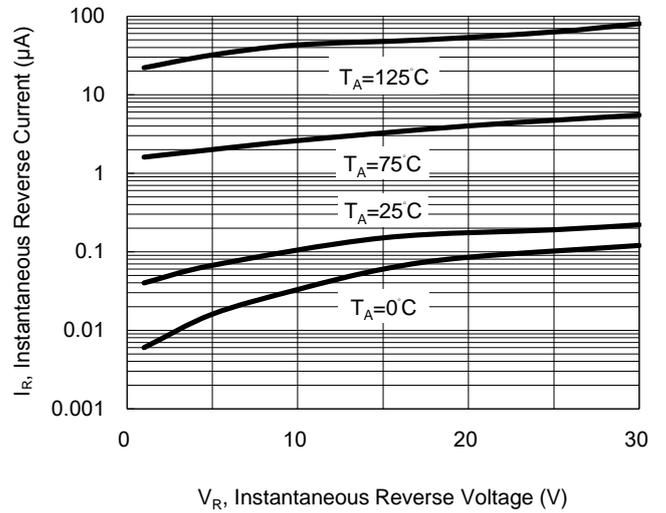


Fig.3 Capacitance Between Terminals Characteristics

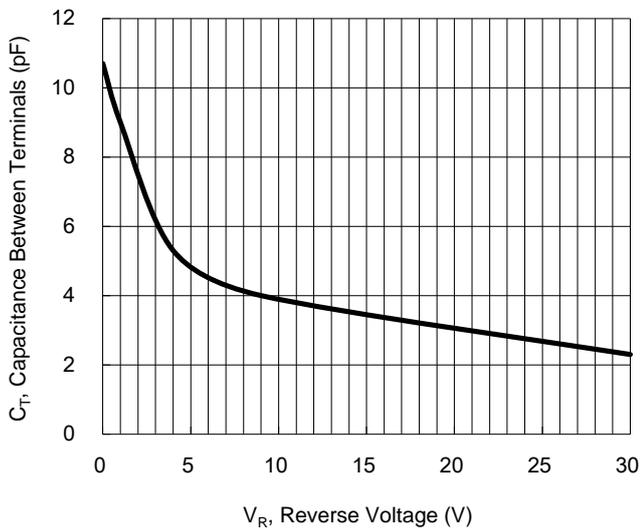
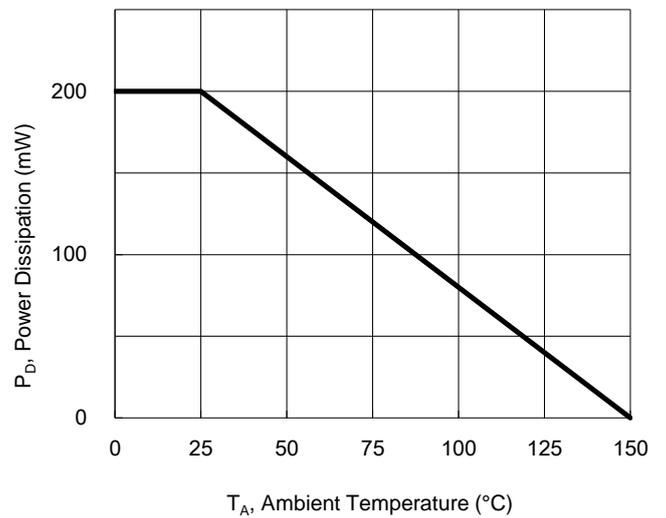
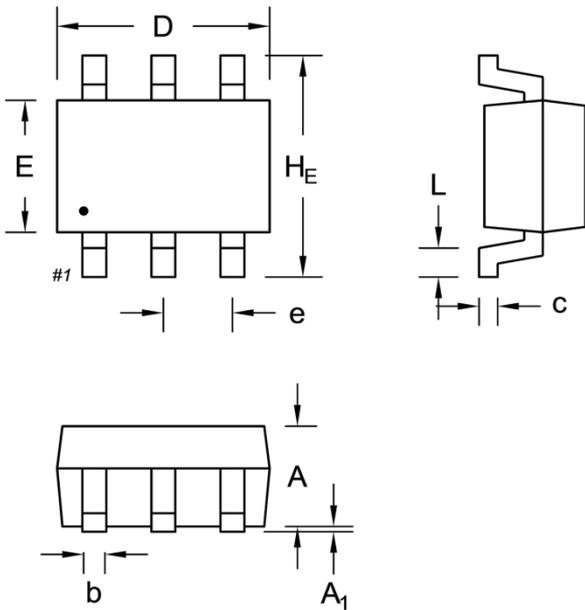


Fig.4 Power Derating Curve



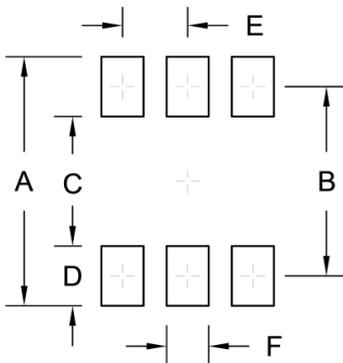
PACKAGE OUTLINE DIMENSIONS

SOT-363



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.90	1.00	0.035	0.039
A ₁	0.00	0.10	0.000	0.004
b	0.15	0.30	0.006	0.012
c	0.10	0.25	0.004	0.010
D	1.80	2.20	0.071	0.087
E	1.15	1.35	0.045	0.053
H _E	2.00	2.20	0.079	0.087
e	0.65 (Ref.)		0.026 (Ref.)	
L	0.15	0.40	0.006	0.016

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	2.50	0.098
B	1.90	0.075
C	1.30	0.051
D	0.60	0.024
E	0.65	0.026
F	0.42	0.017

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.

MARKING DIAGRAM



KLx = Marking Code

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