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

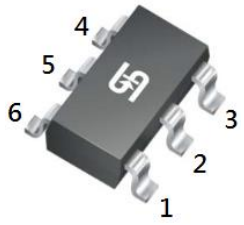
- Voltage clamping
- Reverse polarity protection
- High speed switching

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

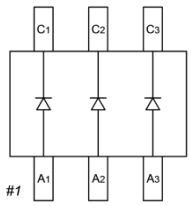
Pb-Free RoHS COMPLIANT HALOGEN FREE

MECHANICAL DATA

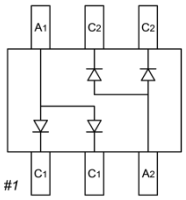
- Case: SOT-363
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Weight: 6.99mg (approximately)



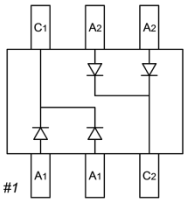
PIN CONFIGURATION



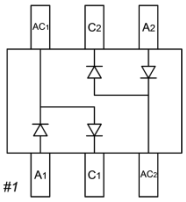
BAT54T



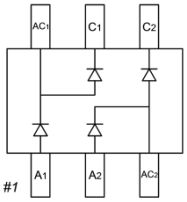
BAT54AD



BAT54CD



BAT54SD



BAT54BR

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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 < 1.0s	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°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage per diode[1]	I_F = 0.1mA, T_J = 25°C	V_F	-	0.24	V
	I_F = 1mA, T_J = 25°C		-	0.32	V
	I_F = 10mA, T_J = 25°C		-	0.40	V
	I_F = 30mA, T_J = 25°C		-	0.50	V
	I_F = 100mA, T_J = 25°C		-	1.00	V
Reverse voltage	I_R = 100μA, T_J = 25°C	V_R	30	-	V
Reverse current @ rated V_R per diode[2]	V_R = 25 V, T_J = 25°C	I_R	-	2	μA
Junction capacitance	1MHz, V_R = 1V	C_T	-	10	pF
Reverse recovery time	I_F = I_R = 10mA , R_L = 100Ω , I_{RR} = 1mA	t_{rr}	-	5	ns

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

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°C unless otherwise noted)

Fig.1 Typical Forward Characteristics

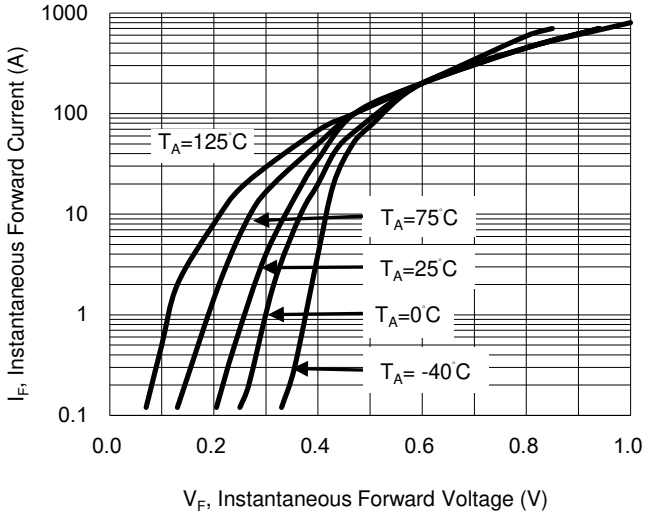


Fig.2 Typical Reverse Characteristics

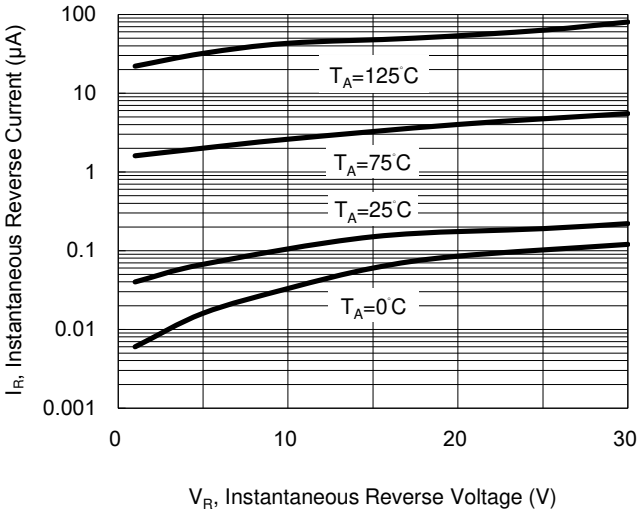


Fig.3 Capacitance Between Terminals Characteristics

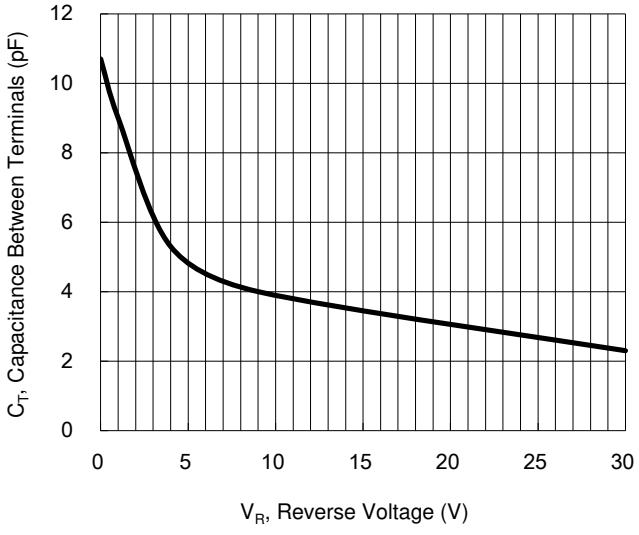
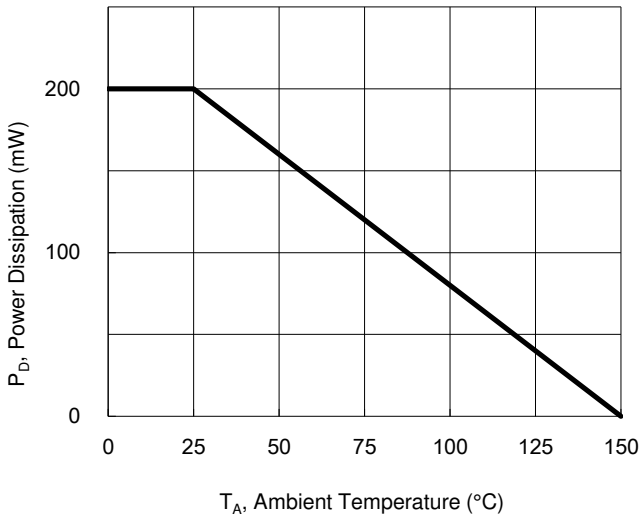
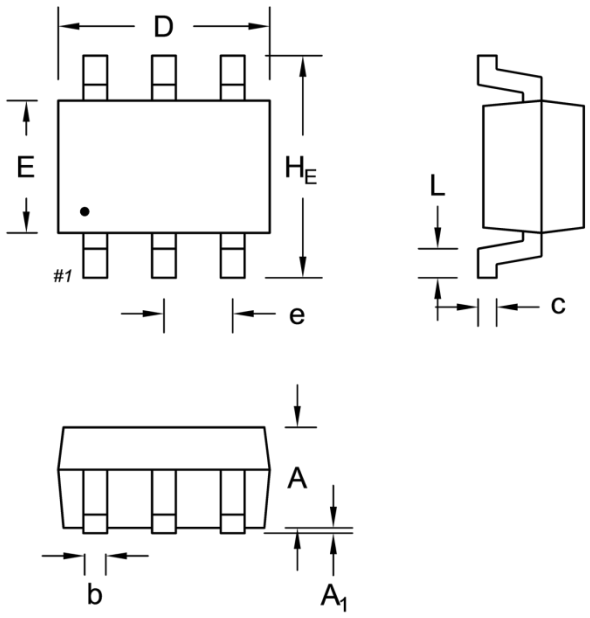


Fig.4 Power Derating Curve



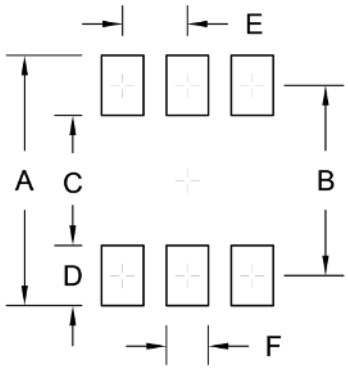
PACKAGE OUTLINE DIMENSIONS

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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