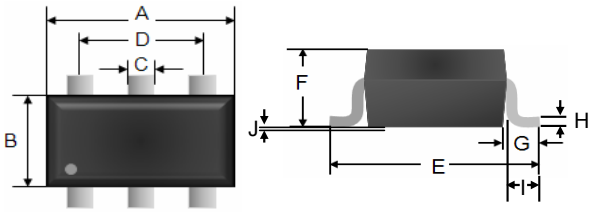
TAIWAN SEMICONDUCTOR

BAT54T/AD/CD/SD/BR
200mW Surface Mount Schottky Barrier Diode

Small Signal Diode

SOT-363



Features

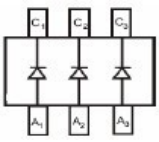
- ✧Fast switching speed
- ✧Low forward voltage drop
- ✧Moisture sensitivity level 1
- ✧Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ✧Pb free version and RoHS compliant
- ✧Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

Mechanical Data

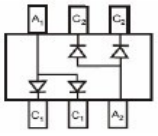
- ✧Case :SOT-363 small outline plastic package
- ✧Terminal: Matte tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ✧High temperature soldering guaranteed: 260°C/10s
- ✧Weight : 0.006 gram (approximately)
- ✧Marking Code : KLA,KL6,KL7,KL8,KLB

Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.80	2.00	0.071	0.079
B	1.15	1.35	0.045	0.053
C	0.15	0.30	0.006	0.012
D	1.30 BSC		0.051 BSC	
E	2.10 BSC		0.083 BSC	
F	-	1.10	-	0.043
G	0.42		0.017	
H	0.1 BSC		0.004 BSC	
I	0.25	0.40	0.010	0.016
J	0.02	0.10	0.010	0.004

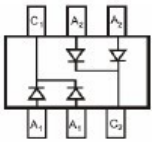
Pin Configuration



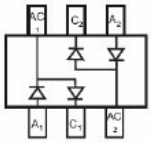
BAT54T



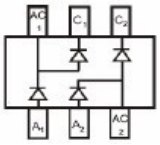
BAT54AD



BAT54CD



BAT54SD



BAT54BR

Ordering Information

Package	Part No.	Packing	Marking
SOT-363	BAT54T RF	3K / 7" Reel	KLA
SOT-363	BAT54AD RF	3K / 7" Reel	KL6
SOT-363	BAT54CD RF	3K / 7" Reel	KL7
SOT-363	BAT54SD RF	3K / 7" Reel	KL8
SOT-363	BAT54BR RF	3K / 7" Reel	KLB
SOT-363	BAT54T RFG	3K / 7" Reel	KLA
SOT-363	BAT54AD RFG	3K / 7" Reel	KL6
SOT-363	BAT54CD RFG	3K / 7" Reel	KL7
SOT-363	BAT54SD RFG	3K / 7" Reel	KL8
SOT-363	BAT54BR RFG	3K / 7" Reel	KLB

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Type Number	Symbol	Value	Units
Peak Repetitive Peak reverse voltage Working Peak Reverse Voltage DC Reverse Voltage	V_{RRM} V_{RWM} V_R	30	V
Forward Continuous Current	I_F	200	mA
Repetitive Peak Forward Current	I_{FRM}	300	mA
Forward surge current @t<1.0s	I_{FSM}	600	mA
Power Dissipation	Pd	200	mW
Thermal resistance,junction to ambient air	$R_{\theta JA}$	625	°C/W
Operating and Storage temperature	T_j, T_{STG}	-65 to 150	°C

Small Signal Diode

Rating and Characteristic Curves

Fig.1 Forward Characteristics

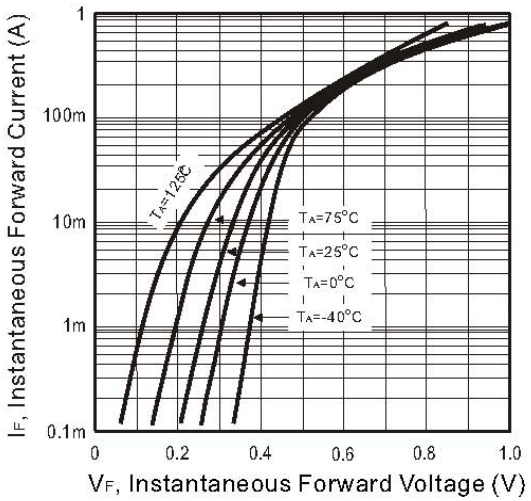


Fig.2 Reverse Characteristics

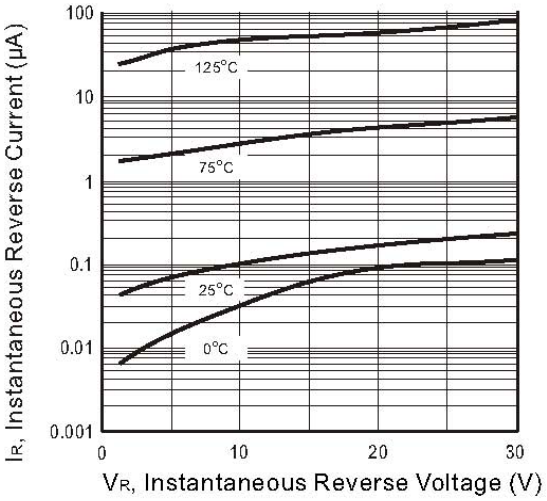


Fig.3 Capacitance Between Terminals Characteristics

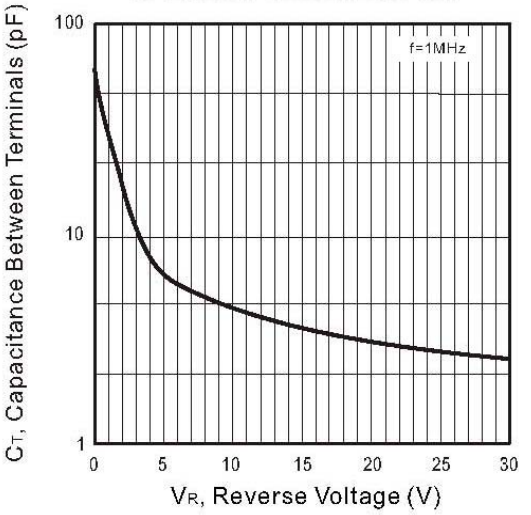
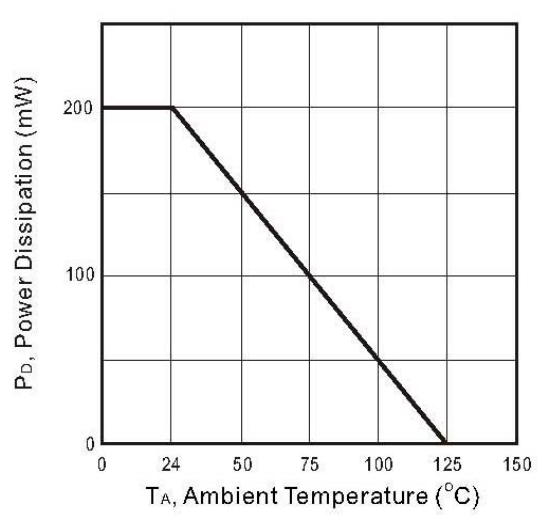


Fig.4 Power Derating Curve



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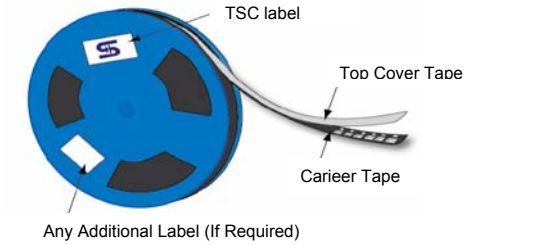
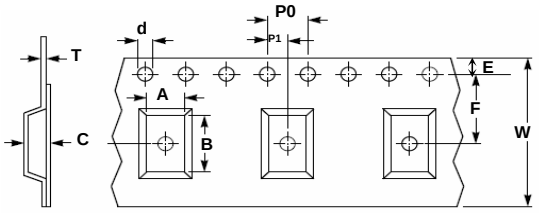
Small Signal Diode

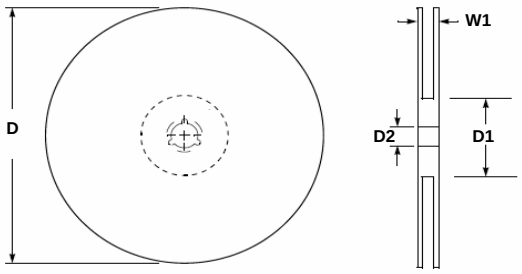
Electrical Characteristics

Type Number		Symbol	Min	Max	Units
Reverse Breakdown Voltage	I_R= 100μA	$V_{(BR)}$	30	--	V
Forward Voltage	I_F= 0.1mA	V_F	--	0.24	V
	I_F= 1mA		--	0.32	V
	I_F= 10mA		--	0.40	V
	I_F= 30mA		--	0.50	V
	I_F= 100mA		--	1.00	V
Reverse current	V_R= 25V	I_R	--	2.0	μA
Total Capacitance	V_R=1V, f=1.0MHz	C_T	--	10	pF
Reverse Recovery Time	I_F=I_R=10mA, R_L=100Ω, I_{RR}=1mA	t_{rr}	--	5.0	nS

Tape & Reel specification







Item	Symbol	Dimension(mm)
Carrier width	A	3.15 ±0.10
Carrier length	B	2.77 ±0.10
Carrier depth	C	1.22 ±0.10
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178 ± 1
Reel inner diameter	D1	55 Min
Feed hole width	D2	13.0 ± 0.20
Sprocke hole position	E	1.75 ±0.10
Punch hole position	F	3.50 ±0.05
Sprocke hole pitch	P0	4.00 ±0.10
Embossment center	P1	2.00 ±0.05
Overall tape thickness	T	0.229 ±0.013
Tape width	W	8.10 ±0.20
Reel width	W1	12.30 ±0.20