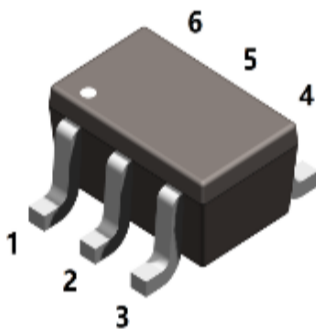


Features

- Fast switching
- Low forward voltage drop
- Ultra-small surface mount package
- PN junction guard ring for transient and ESD protection

Mechanical Data

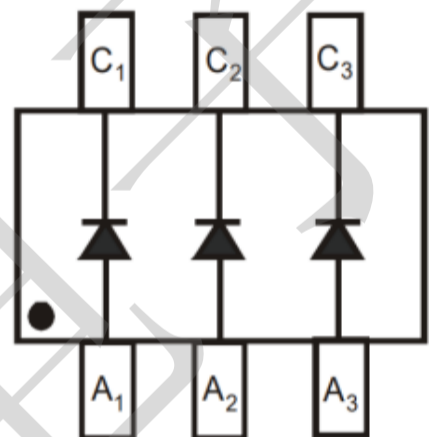
- Case: SOT-363



SOT-363

Applications

- High speed switching application



BAT54TW

Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Working Peak Reverse Voltage	V_{RWM}	30	V
DC Reverse Voltage	V_R	30	V
Forward Continuous Current	I_F	200	mA
Repetitive Peak Forward Current	I_{FRM}	300	mA
Forward Surge Current @ $t_p < 1s$	I_{FSM}	600	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation *1	P_D	200	mW
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	500	°C/W
Operating junction Temperature	T_J	-55 ~ +125	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)}$	$I_R = 100\mu\text{A}$	30	-	-	V
Forward Voltage *2	V_F	$I_F = 0.1\text{mA}$	-	-	0.24	V
		$I_F = 1\text{mA}$	-	-	0.32	V
		$I_F = 10\text{mA}$	-	-	0.40	V
		$I_F = 30\text{mA}$	-	-	0.50	V
		$I_F = 100\text{mA}$	-	-	0.80	V
Maximum Peak Reverse Current *3	I_R	$V_R = 25\text{V}$	-	-	2	μA
Capacitance Between Terminals	C_T	$V_R = 1\text{V}, f = 1\text{MHz}$	-	-	10	pF
Reverse Recovery Time	t_{rr}	$I_F = I_R = 10\text{mA}$ $I_{rr} = 0.1 \cdot I_R, R_L = 100\Omega$	-	-	5	ns

Notes:

1. The data tested by surface mounted on FR-4 board with recommended pad layout
2. pulse test, $t_p \leq 300\mu\text{s}$
3. pulse test, $t_p \leq 5\text{ms}$

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

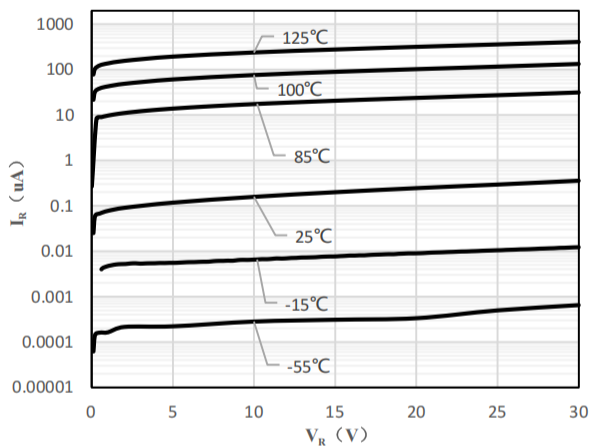


Fig 1 Typical Reverse Characteristic

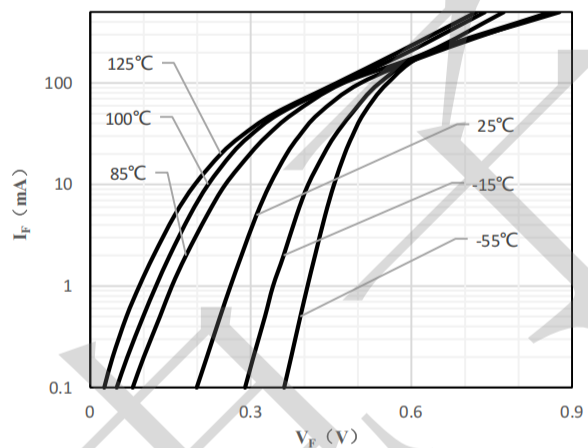


Fig 2 Typical Forward Characteristics

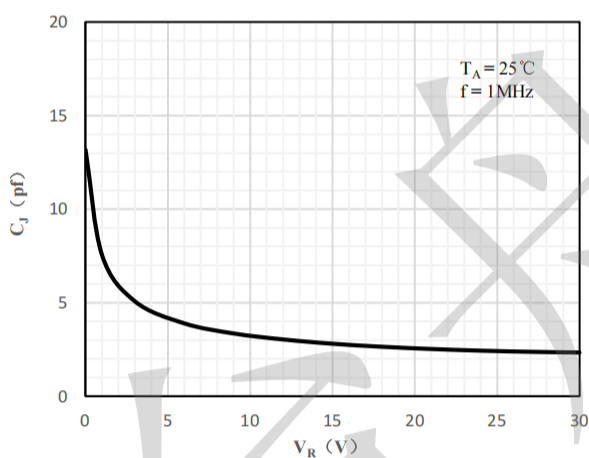


Fig 3 Capacitance vs. Reverse Voltage

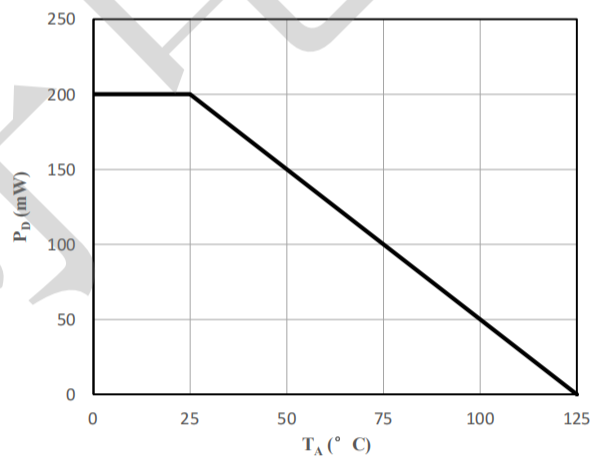
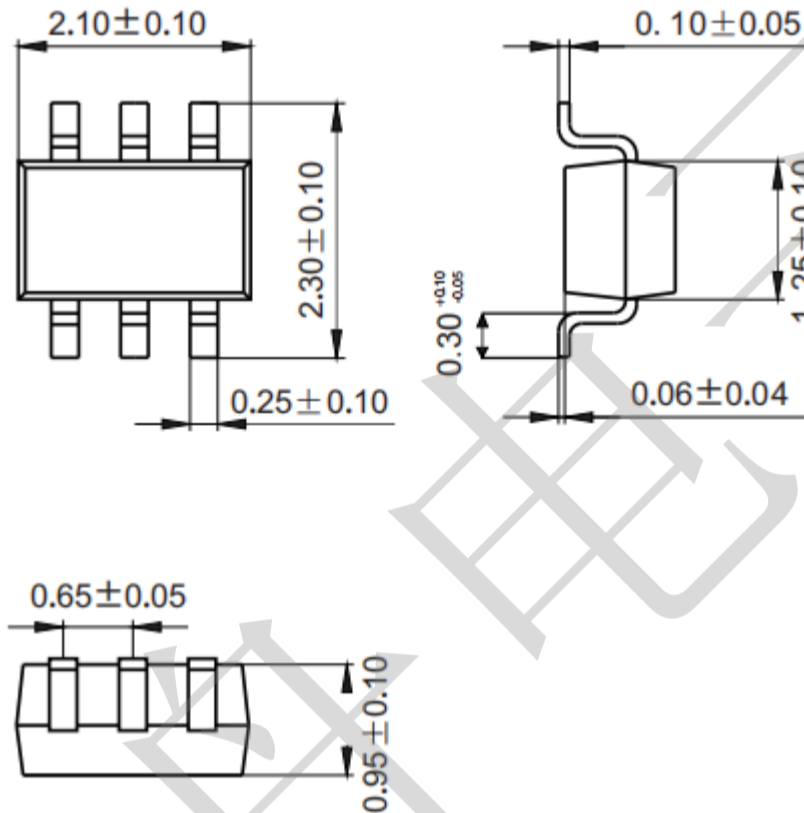


Fig 4 Power Derating Curve

Package Outline Dimensions (unit:mm)

SOT-363



Mounting Pad Layout (unit: mm)

