STAR SEA

BAT54 THRU BAT54S

RoHS COMPLIANT

Schottky Barrier Diode

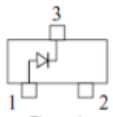
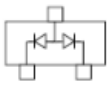
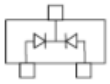
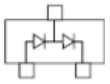


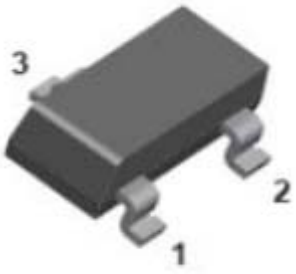
Figure 1


Figure 2


Figure 3


Figure 4

BAT54 BAT54A BAT54C BAT54S



Features

- Moisture sensitivity level 1
- Reverse voltage: 30V
- Average forward current : 200mA

Application

- High frequency and low voltage rectifier

Mechanical data

- **Package**: SOT-23
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ **Maximum Ratings** (T_a=25℃ Unless otherwise specified)

Parameter	Symbol	Unit	Value	
Device marking code			BAT54	KL1
			BAT54A	KL2
			BAT54C	KL3
			BAT54S	KL4
Repetitive peak reverse voltage	V_{RRM}	V	30	
Forward current, per leg	I_F	mA	200	
Non-repetitive Surge peak forward current @ t=8.3ms half-sine wave	I_{FSM}	A	0.6	
Non-repetitive Surge peak forward current @ t=1ms square wave			0.6	
Repetitive Peak Forward Current@ tp=1ms, δ=0.25	I_{FRM}	A	0.3	
Power dissipation	P_D	mW	200	
Junction temperature	T_J	℃	-55 to +125	
Storage temperature	T_{STG}	℃	-55 to +125	

■ Electrical Characteristics (Ta=25℃ Unless otherwise specified)

Parameter	Symbol	UNIT	Conditions	Min	TYP	Max
Reverse voltage	V_R	V	I_R=0.1mA	30		
Forward voltage	V_{F1}	V	I_F=0.1mA			0.24
	V_{F2}	V	I_F=1mA			0.32
	V_{F3}	V	I_F=10mA			0.4
	V_{F4}	V	I_F=30mA			0.5
	V_{F5}	V	I_F=100mA			1
Reverse leakage current	I_R	uA	V_R=25V			2
Junction capacitance	Cj	pF	V_R=1V,f=1MHz			10
Reverse recovery time	Trr	ns	I_F=I_R=10mA, Irr=1mA,			5

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}$(1)	℃/W	500
Thermal resistance, junction-to-case	$R_{\theta J-C}$(1)	℃/W	400

Note:

（1）Device mounted on PCB, single-sided copper, with standard footprint

■Characteristics

Fig 1：P_D-Ta Curve

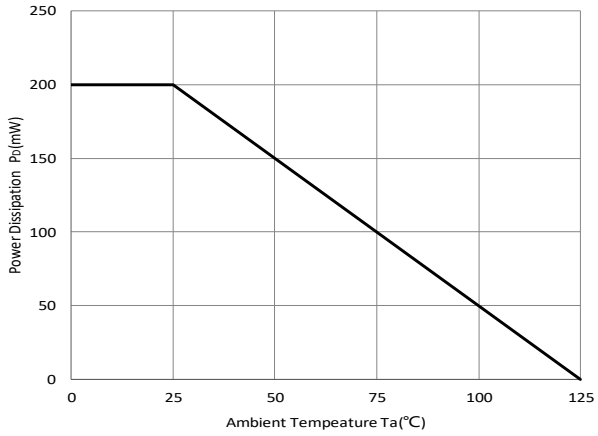


Fig 2：Capacitance Capability

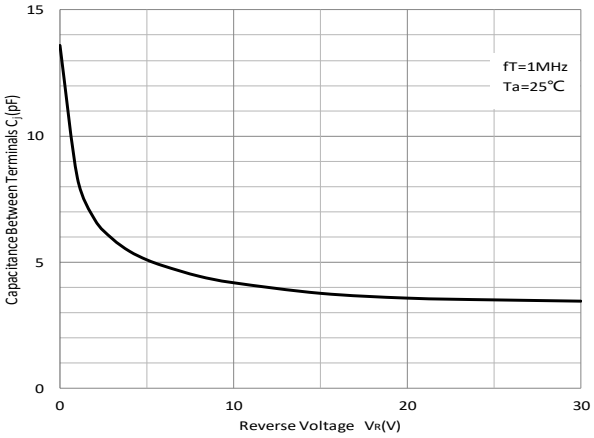


Fig 3：Typical Forward Characteristics

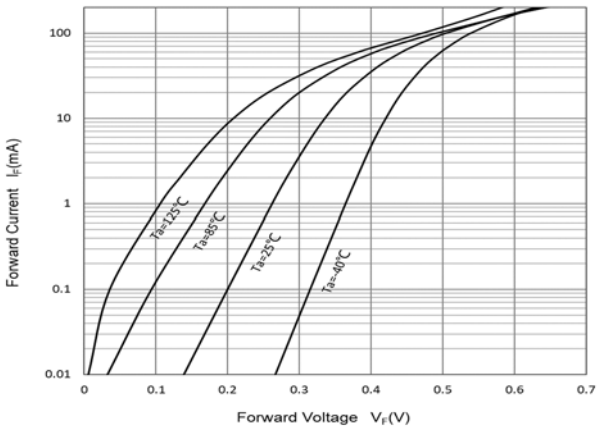
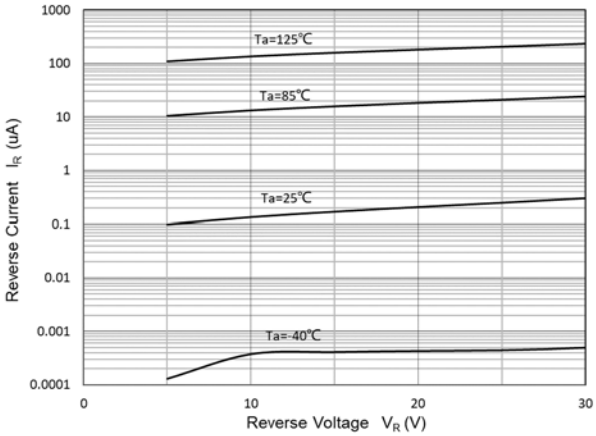


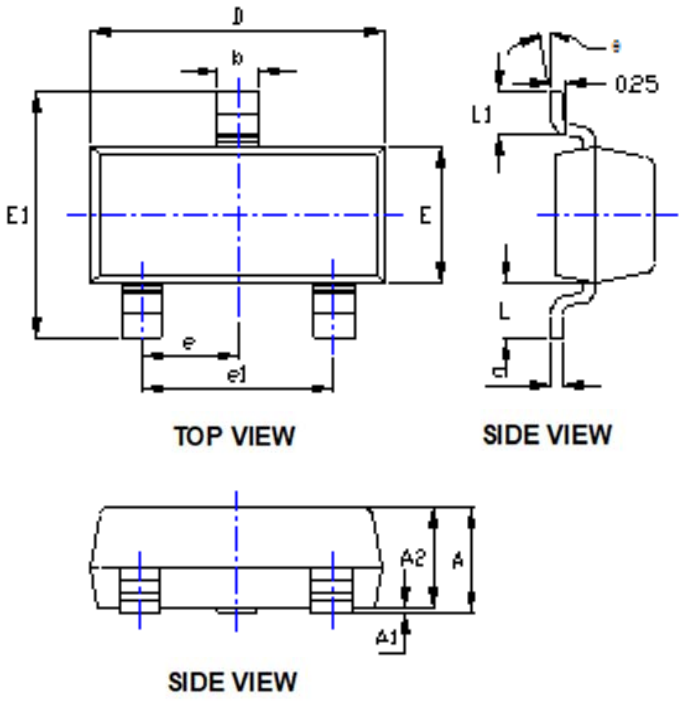
Fig 4：Typical Reverse Characteristics



■Ordering Information

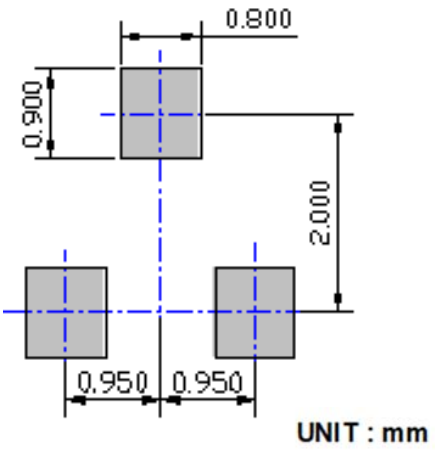
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity (pcs)	Delivery mode
BAT54	F2	Approximate 0.008	3000	30000	120000	7” reel
BAT54	F4	Approximate 0.008	10000	/	210000	13” reel
BAT54A	F2	Approximate 0.008	3000	30000	120000	7” reel
BAT54A	F4	Approximate 0.008	10000	/	210000	13” reel
BAT54C	F2	Approximate 0.008	3000	30000	120000	7” reel
BAT54C	F4	Approximate 0.008	10000	/	210000	13” reel
BAT54S	F2	Approximate 0.008	3000	30000	120000	7” reel
BAT54S	F4	Approximate 0.008	10000	/	210000	13” reel

■ Outline Dimensions



DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

■ Suggested Pad Layout



UNIT : mm

Note:
1. All dimensions are in millimeters (mm) unless otherwise specified.
[所有尺寸均以毫米为单位，除非另有说明]
2. General tolerances: ±0.10mm unless otherwise specified.
[通用公差为±0.10mm，除非另有说明]
3. Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
4.All dimensions shown are exclusive of burrs and gate residues. Burrs and gate vestiges shall not exceed 0.15 mm in maximum.
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
5.Dimension b does not include dambar protrusion of max 0.100 mm per side.
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
6.Dimensions D and E are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.
[D和E是塑封体的外部极限尺寸，不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺，但是包含了包封错位的最大尺寸]
7.Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.
[成型的管脚应为同一平面，共面性最大为0.1mm]

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