

PRIMARY CHARACTERISTICS

VRRM	IO	VF(type)	I FSM	Tj max
30V	200mA	1.0V	600mA	125°C

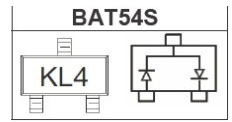
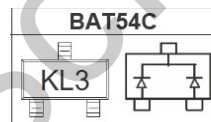
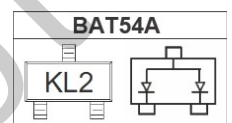
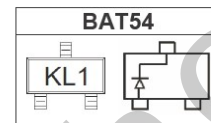
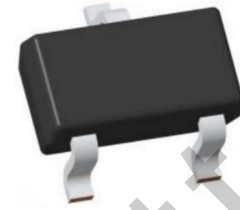
Features

- High Current Capability
- Low Forward Voltage Drop
- Extremely Fast Switching Speed
- RoHS Compliant and Halogen Free

Mechanical Data

- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any

SOT-23



Package Marking and Ordering Information

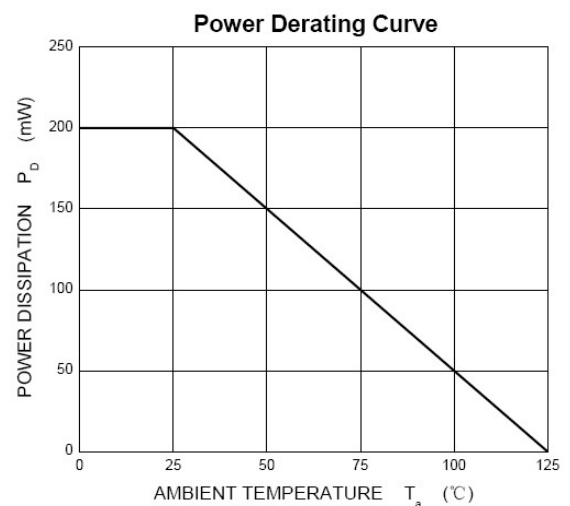
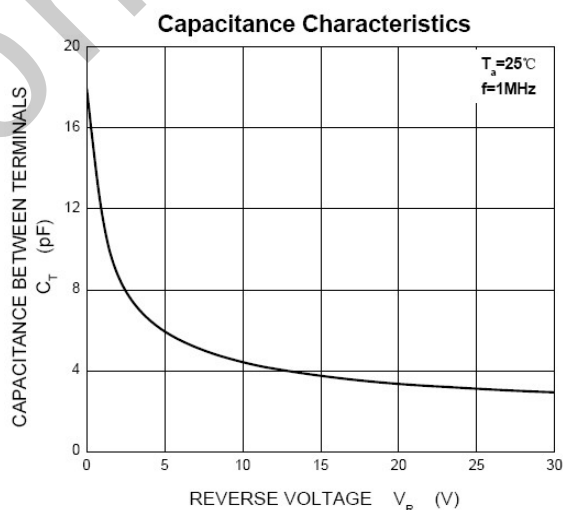
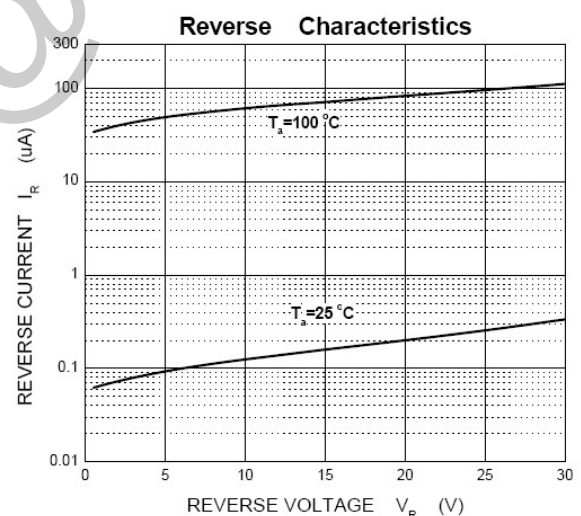
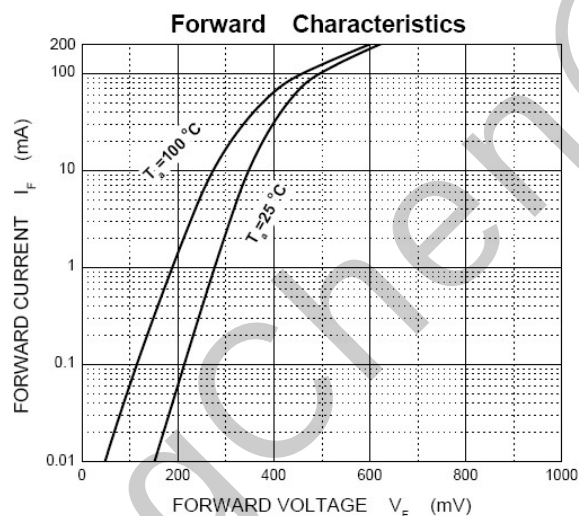
Product ID	Pack	Marking	Qty(PCS)
BAT54	SOT-23	KL1	3000
BAT54A	SOT-23	KL2	3000
BAT54C	SOT-23	KL3	3000
BAT54S	SOT-23	KL4	3000

Absolute Maximum Ratings (TC=25°C unless otherwise noted)

Parameters	Symbols	Limits	Units
Maximum repetitive peak reverse voltage	VRRM	30	V
Maximum RMS voltage	VRMS	21	V
Reverse Voltage	VR	30	V
Maximum DC blocking voltage	VDC	30	V
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	IFSM	0.6	A
Average Rectified Current	IO	200	mA
Power Dissipation	PD	200	mW
Typical junction capacitance (Note1)	CJ	10	pF
Typical thermal resistance (Note2)	RthJA	500	°C/W
Operating junction temperature range	TJ	125	°C
Storage temperature range	TSTG	-50~+150	°C

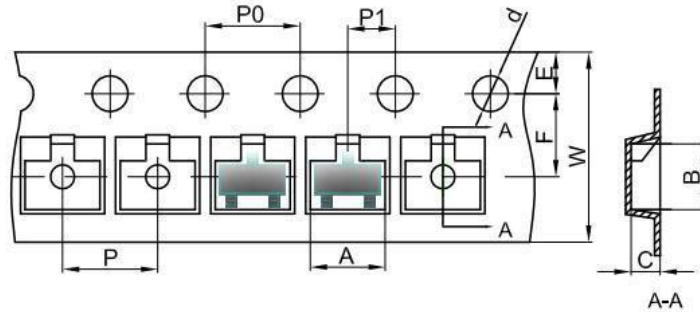
Electrical Characteristics (T_J=25°C , unless otherwise noted)

Parameter	Symbols	Test Conditions	Min	Type	Max	Units
Minimum reverse breakdown voltage	VR	IR=100μA	30	-	-	V
Maximum instantaneous forward voltage	VF	IF=0.1mA	-	-	0.24	V
		IF=1.0mA	-	-	0.32	
		IF=10mA	-	-	0.40	
		IF=30mA	-	-	0.50	
Maximum DC reverse current at rated DC blocking voltage	IR	VR=25V	-	-	2.0	uA
Reverse Recovery Time	TRR	IF=IR=10mA, Irr=0.1 × IR, RL=100 Ω	-	-	5	ns
Capacitance between terminals	CT	VR=1.0V, f=1MHz	-	-	10	pF

Typical Characteristics


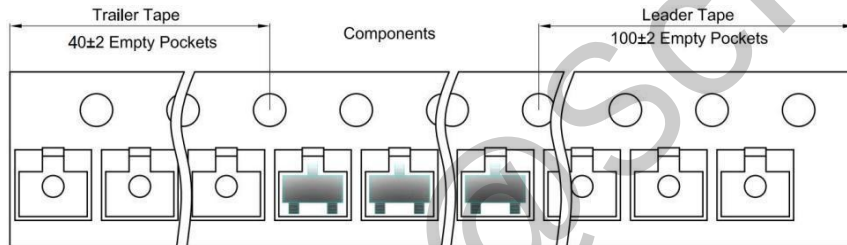
Package Information

Carrier Dimension(mm)

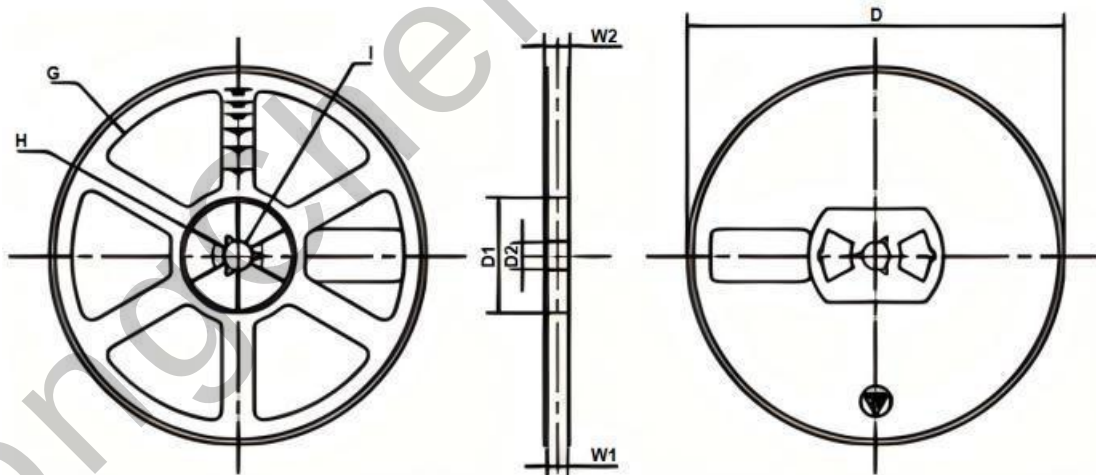


Dimensions are in millimeter

Pkg Type	A0	A1	B0	B1	K0	D0	D1	E	F	P0	P1	P2	10*P0	W	T
SOT-23	3.15	1.09	2.77	2.15	1.22	1.55	1.00	1.75	3.50	4.00	4.00	2.00	40.00	8.00	0.20
(Tolerance)	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.2	±0.1	±0.03



Reel Dimension(mm)



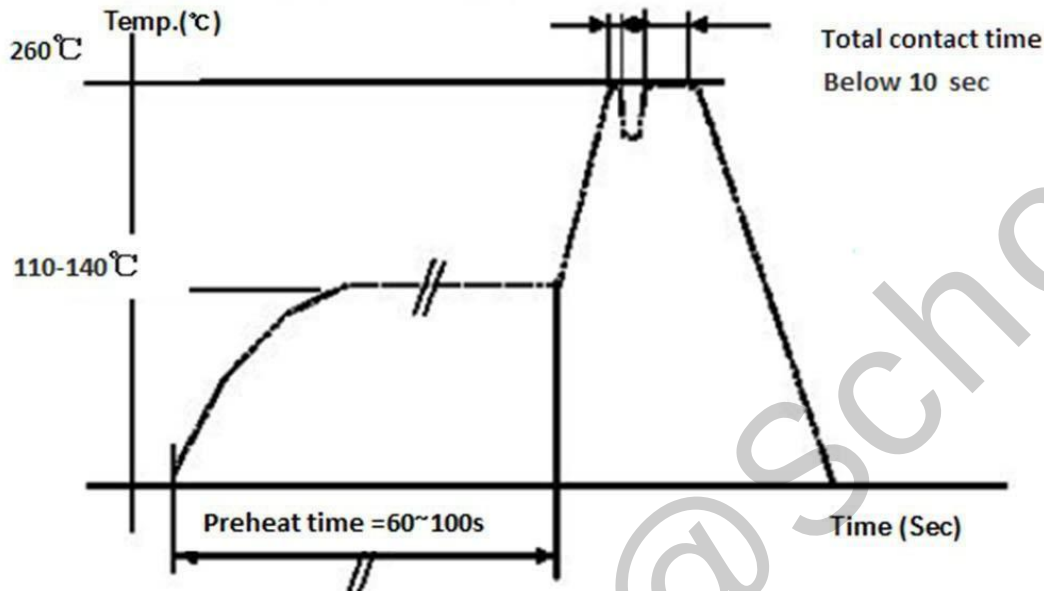
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	±2	±1	±1	±1	±1	±1	±1	±1

Package Specifications

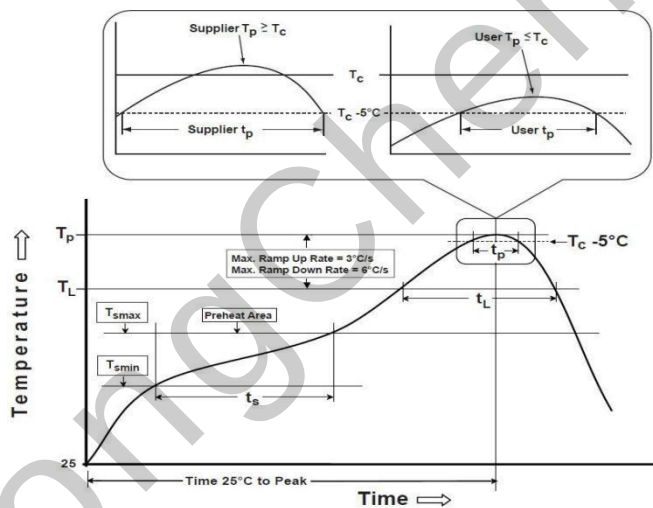
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOT23	7'	178	3	210*208*203	45	440*400*230	180

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020

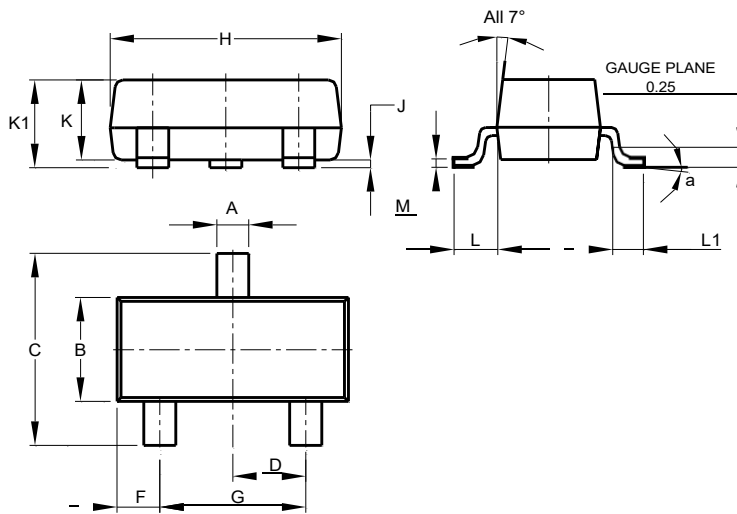


Preheat/Soak Temperature Min (T _{smin}) Temperature Max (T _{smax}) Time (ts) from (T _{smin} to T _{smax})	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217°C
Ramp-up Rate to 217°C(Melting Point of Solder)	3°C/sec
Time at Temp.>217°C (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5°C
Time within 5°Cbelow Peak Temp.	20~40 Sec
Cooling Rate	6°C/sec (max)
Time from 25°C to Peak Temp.	8min (max)

c) Manual Soldering

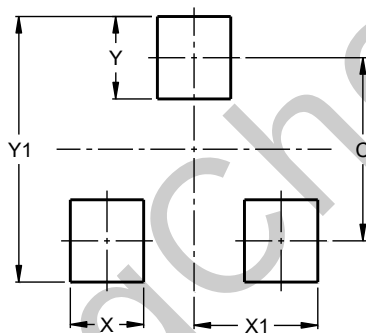
When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

Package Dimensions



SOT23			
Dim	Min	Max	Typ
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Pad Dimensions



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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