



BAT54 /A /C /S

SURFACE MOUNT SCHOTTKY BARRIER DIODE

Features

- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- Lead Free/RoHS Compliant (Note 3)
- "Green" Molding Compound (No Br, Sb) (Note 4)
- Qualified to AEC-Q101 Standards for High Reliability

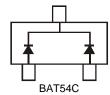
Mechanical Data

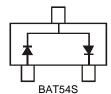
- Case: SOT-23
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: See Diagrams Below
- Marking Information: See Page 3
- Ordering Information: See Page 2
- Weight: 0.008 grams (approximate)











Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V _{RRM} V _{RWM} V _R	30	V
Forward Continuous Current (Note 2)		lF	200	mA
Repetitive Peak Forward Current		I _{FRM}	300	mA
Forward Surge Current	@ t < 1.0s	I _{FSM}	600	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	PD	200	mW
Thermal Resistance, Junction to Ambient Air (Note 2)	$R_{ ext{ heta}JA}$	500	°C/W
Operating and Storage Temperature Range (Note 5)	TJ, T _{STG}	-65 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V _{(BR)R}	30	_	_	V	I _{RS} = 100μA
Forward Voltage	VF	_	_	240 320 400 500 800	mV	$I_{F} = 0.1mA$ $I_{F} = 1mA$ $I_{F} = 10mA$ $I_{F} = 30mA$ $I_{F} = 100mA$
Reverse Leakage Current (Note 1)	IR	_	_	2.0	μΑ	V _R = 25V
Total Capacitance	CT		_	10	pF	$V_{R} = 1.0V, f = 1.0MHz$
Reverse Recovery Time	t _{rr}	_	_	5.0	ns	$I_F = 10$ mA through $I_R = 10$ mA t $I_R = 1.0$ mA, $R_L = 100\Omega$

1. Short duration test pulse used to minimize self-heating effect.

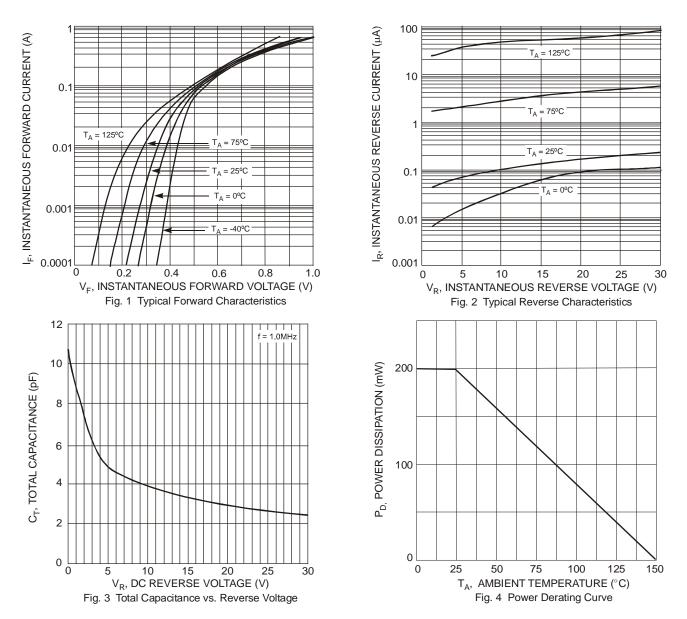
Notes:

2. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf. 3. No purposefully added lead.

Products manufactured with date code VD (Week 50, 2008) and newer are built with Green Molding Compound. Products manufactured with date code 4. prior to VD are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.

5. The heat generated must be less than the thermal conductivity from Junction-to-Ambient: $dP_D/dT_J < 1/R_{BJA}$





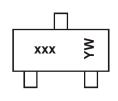
Ordering Information (Note 6)

Part Number	Case	Packaging
BAT54-7-F	SOT-23	3000/Tape & Reel
BAT54A-7-F	SOT-23	3000/Tape & Reel
BAT54C-7-F	SOT-23	3000/Tape & Reel
BAT54S-7-F	SOT-23	3000/Tape & Reel

Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.



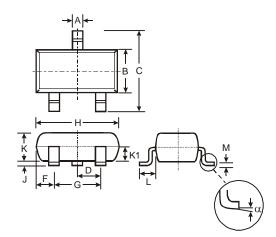
Marking Information



 $\begin{array}{l} xxx = \mbox{Product Type Marking Code} \\ KL1 = \mbox{BAT54} \\ KL2 = \mbox{BAT54A} \\ KL3 = \mbox{BAT54C} \\ KL4 = \mbox{BAT54S} \\ YM = \mbox{Date Code Marking} \\ Y = \mbox{Year (ex: T = 2006)} \\ M = \mbox{Month (ex: 9 = \mbox{September})} \end{array}$

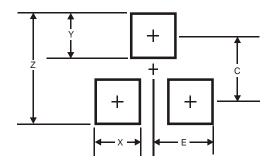
Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	J	K	L	М	Ν	Р	R	S	Т	U	V	W	Х	Y	Z	А	В	С
Month	Jar	n	Feb	Ma	r	Apr	Ma	y	Jun	Ju		Aug	Sep		Oct	Nov	,	Dec
Code	1		2	3		4	5		6	7		8	9		0	N		D

Package Outline Dimensions



	SOT-23						
Dim	Min	Max	Тур				
Α	0.37	0.51	0.40				
В	1.20	1.40	1.30				
С	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				
Н	2.80	3.00	2.90				
J	0.013	0.10	0.05				
κ	0.903	1.10	1.00				
K1	-	-	0.400				
L	0.45	0.61	0.55				
М	0.085	0.18	0.11				
α	0°	8°	-				
All	Dimens	ions in	mm				

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.9
Х	0.8
Y	0.9
С	2.0
E	1.35



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