



PBHV8050SA

Silicon NPN Triple Diffuse High Voltage Transistor

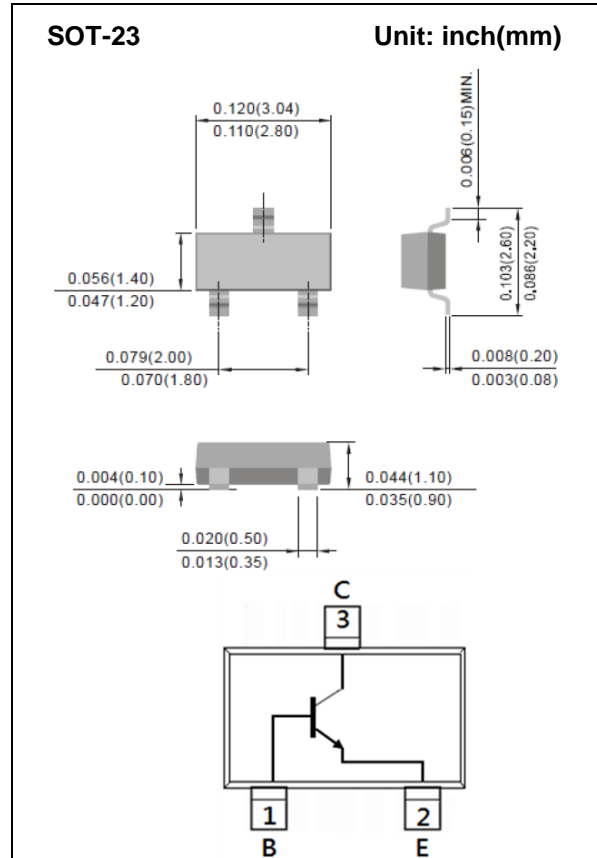
Voltage 500V **Current** 150mA

Features

- Silicon NPN Triple diffuse type
- Excellent DC current gain characteristics
- Low Saturation Voltage
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

Mechanical Data

- Case: SOT-23 Package
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0003 ounces, 0.0084grams



Maximum Ratings and Thermal Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNITS
Collector-Base Voltage	V_{CBO}	500	V
Collector-Emitter Voltage	V_{CEO}	500	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	150	mA
Collector Current (Pulse)	I_{CP}	500	mA
Total Power Dissipation	P_{TOTAL}	0.5	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ\text{C}$
Typical Thermal Resistance from Junction to Ambient ^(Note)	$R_{\theta JA}$	250	$^\circ\text{C/W}$

Note: Mounted on a 1 inch FR-4 with 2oz. square pad of copper.



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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
OFF Characteristics						
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=10\text{mA}, I_B=0\text{A}$	500	-	-	V
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=0.1\text{mA}, I_E=0\text{A}$	500	-	-	V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=0.1\text{mA}, I_C=0\text{A}$	5	-	-	V
Collector-Base Cutoff Current	I_{CBO}	$V_{CB}=500\text{V}, I_E=0\text{A}$	-	-	100	nA
Emitter-Base Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}$	-	-	100	nA
Collector-Emitter Cutoff Current	I_{CES}	$V_{CES}=500\text{V}$	-	-	100	nA
ON characteristics						
DC Current Gain	h_{FE}	$V_{CE}=10\text{V}, I_C=1\text{mA}$	150	-	300	-
		$V_{CE}=10\text{V}, I_C=50\text{mA}$	80	-	300	
		$V_{CE}=10\text{V}, I_C=100\text{mA}$	-	15	-	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=20\text{mA}, I_B=2\text{mA}$	-	-	0.2	V
		$I_C=50\text{mA}, I_B=10\text{mA}$	-	-	0.5	
Base-Emitter Saturation voltage	$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=10\text{mA}$	-	-	0.9	V
Base-Emitter Turn-on voltage	$V_{BE(on)}$	$I_C=50\text{mA}, V_{CE}=10\text{V}$	-	-	0.9	
Transition Frequency	f_T	$I_C=-10\text{mA}, V_{CE}=20\text{V}$	-	50	-	MHz
Collector Output Capacitance	C_{OB}	$V_{CB}=20\text{V}, f=1\text{MHz}$	-	-	8	pF
Turn On Time	t_{ON}	$V_{CE}=100\text{V}, I_C=50\text{mA}$	-	110	-	nS
Turn Off Time	t_{OFF}	$I_{B1}=5\text{mA}, I_{B2}=-10\text{mA}$	-	1500	-	nS



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TYPICAL CHARACTERISTIC CURVES

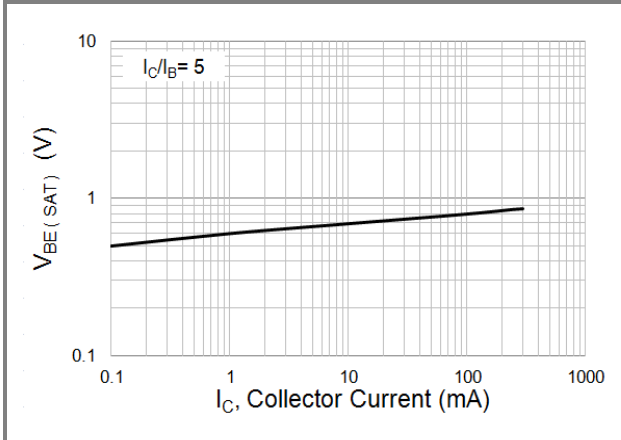


Fig.1 Typical Base-Emitter Saturation Voltage

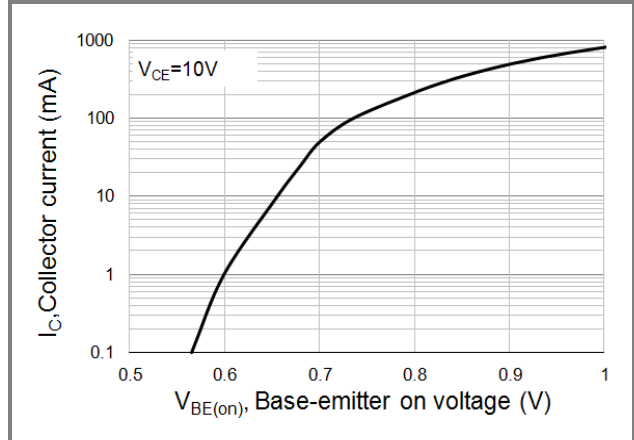


Fig.2 Typical Base-Emitter Turn-on Voltage

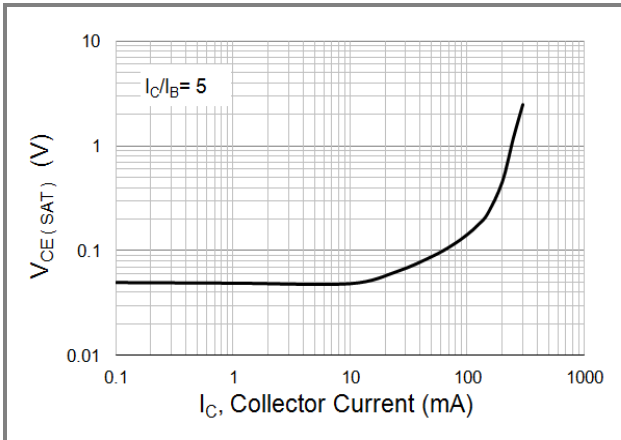


Fig.3 Typical Collector-Emitter Saturation

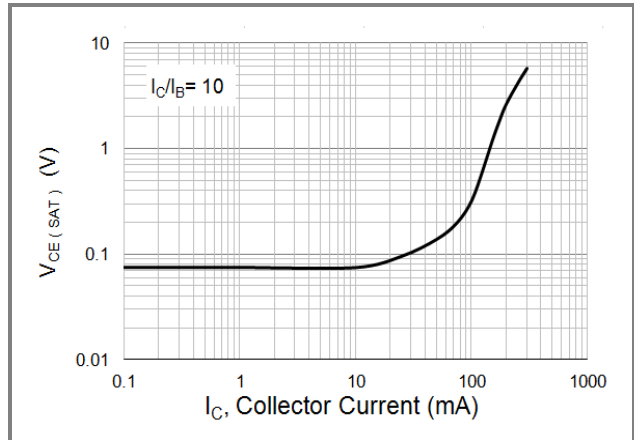


Fig.4 Typical Collector-Emitter Saturation

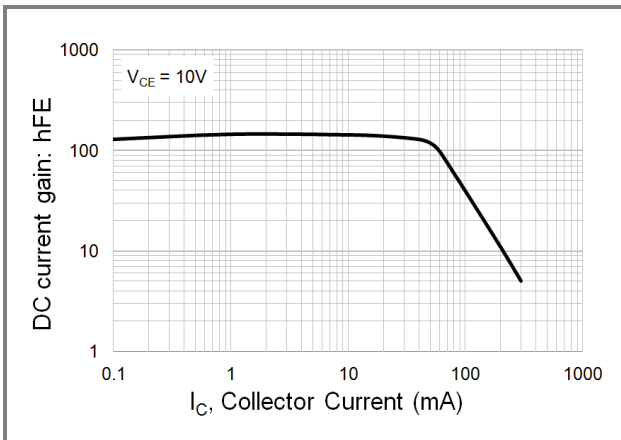


Fig.5 Typical DC Current Gain vs Collector Current

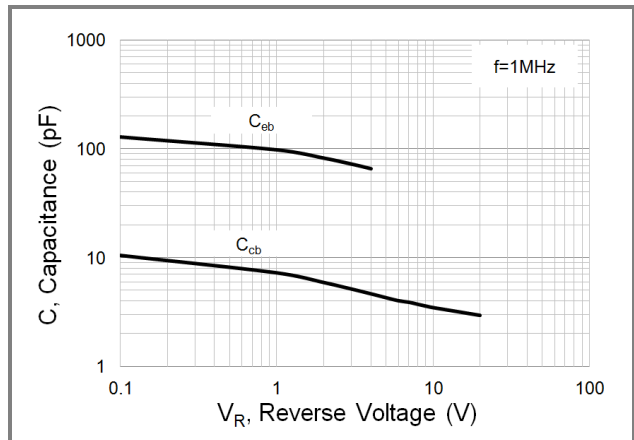


Fig.6 Typical Capacitance

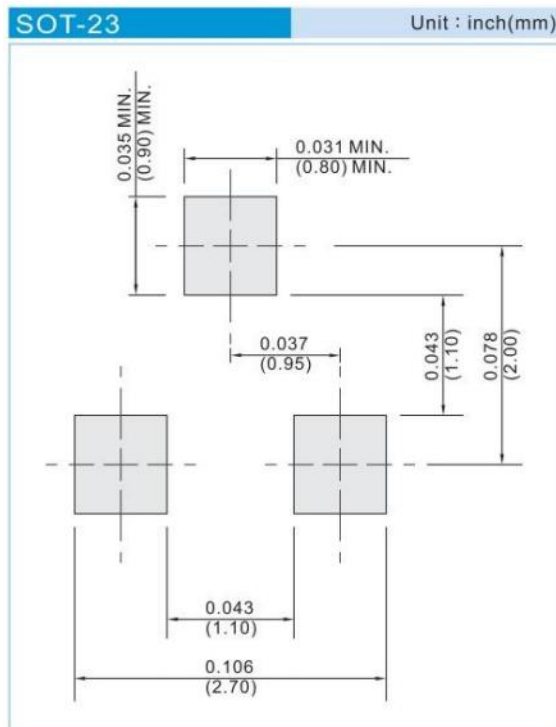


PBHV8050SA

PART NO PACKING CODE VERSION

Part No Packing Code	Package Type	Packing Type	Marking	Version
PBHV8050SA_R1_00001	SOT-23	3K pcs / 7" reel	C1A	Halogen free

MOUNTING PAD LAYOUT





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