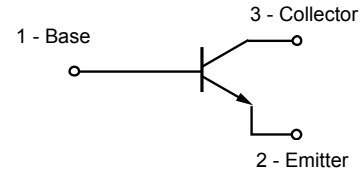


Feature

This device is Pb-Free, Halogen Free/BFR Free and RoHS compliant.

- Very low collector to emitter saturation voltage
- DC current gain >120
- 0.1A continuous collector current
- NPN epitaxial planar silicon transistor


Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness:≤3mil

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Value	Units
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_B=0$	50	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_E=0$	50	V
Emitter -Base Breakdown Voltage	$V_{(BR)EBO}$	$I_C=0$	5	V
Collector Current	I_C		0.1	A
Total Dissipation @25°C	P_{tot}		0.125	W
Storage Temperature	T_{stg}		-65~150	°C
Max. Operating Junction Temperature	T_j		150	°C

Absolute maximum rating@25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
DC Current Gain	h_{FE}	$I_C=1mA, V_{CE}=3.0V$	120		560	-
		$I_C=1mA, V_{CE}=1.0V$	150			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.05A, I_B=5mA$	-		0.15	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.5A, V_{CE}=1.0V$			1.1	V
Collector Cut-off Current ($I_E=0$)	I_{CBO}	$V_{CB}=20V$			0.1	μA
		$V_{CB}=20V, T_C=150^\circ C$			5	
Emitter Cut-off Current($I_C=0$)	I_{EBO}	$V_{EB}=4V$			0.1	μA

Typical Characteristics

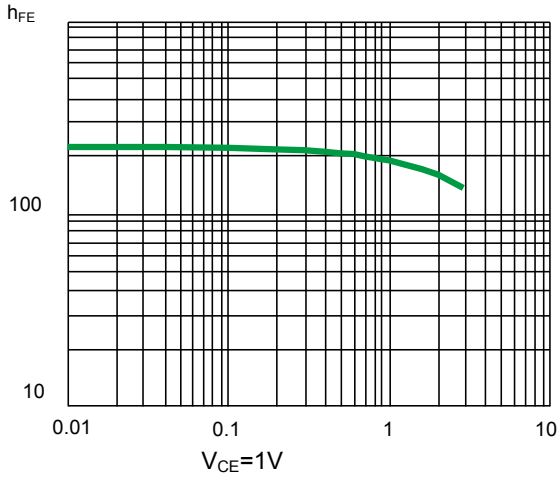


Fig1.DC Current Gain

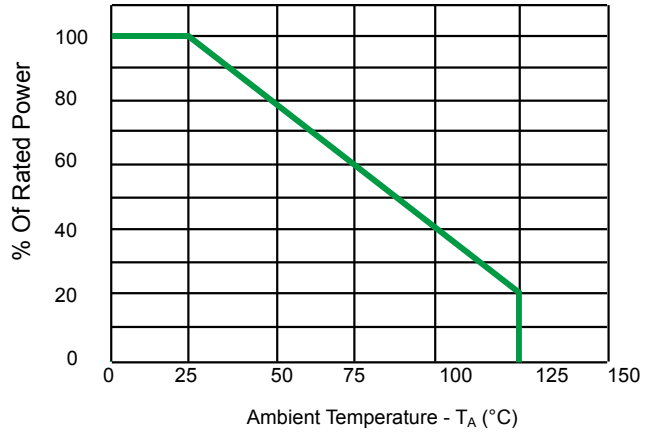


Fig2. Power Derating Curve

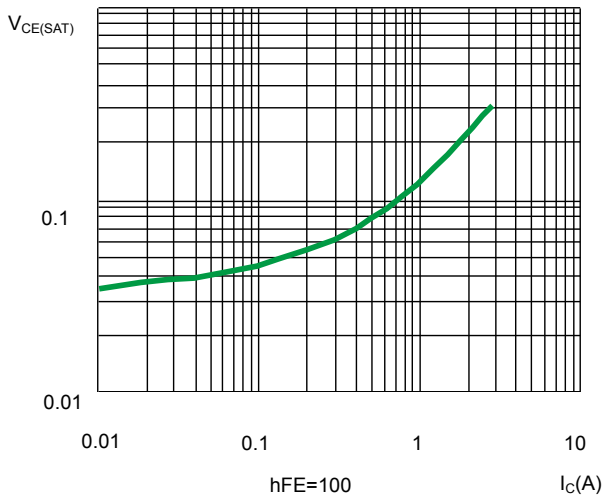


Fig 3. Collector-Emitter Saturation Voltage

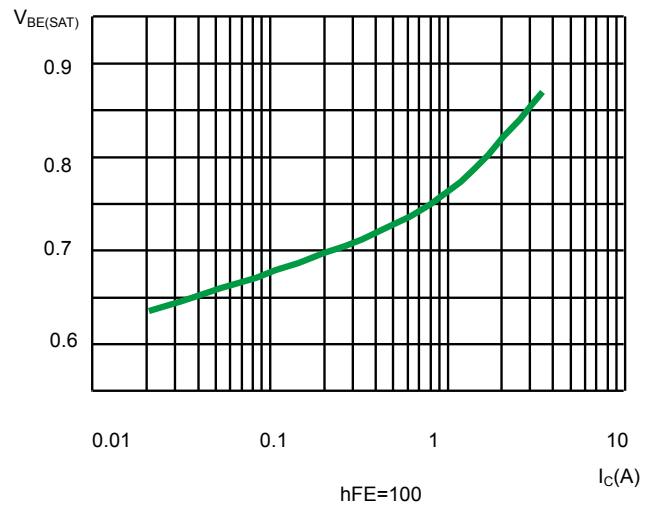


Fig4. Base-Emitter Saturation Voltage

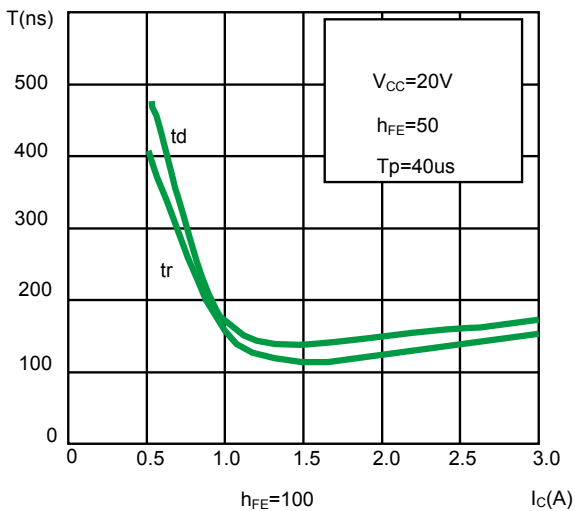


Fig 5. Switching Times Resistive Load

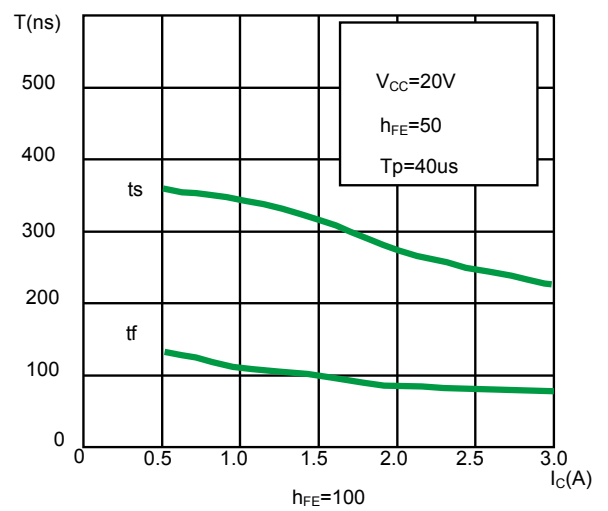
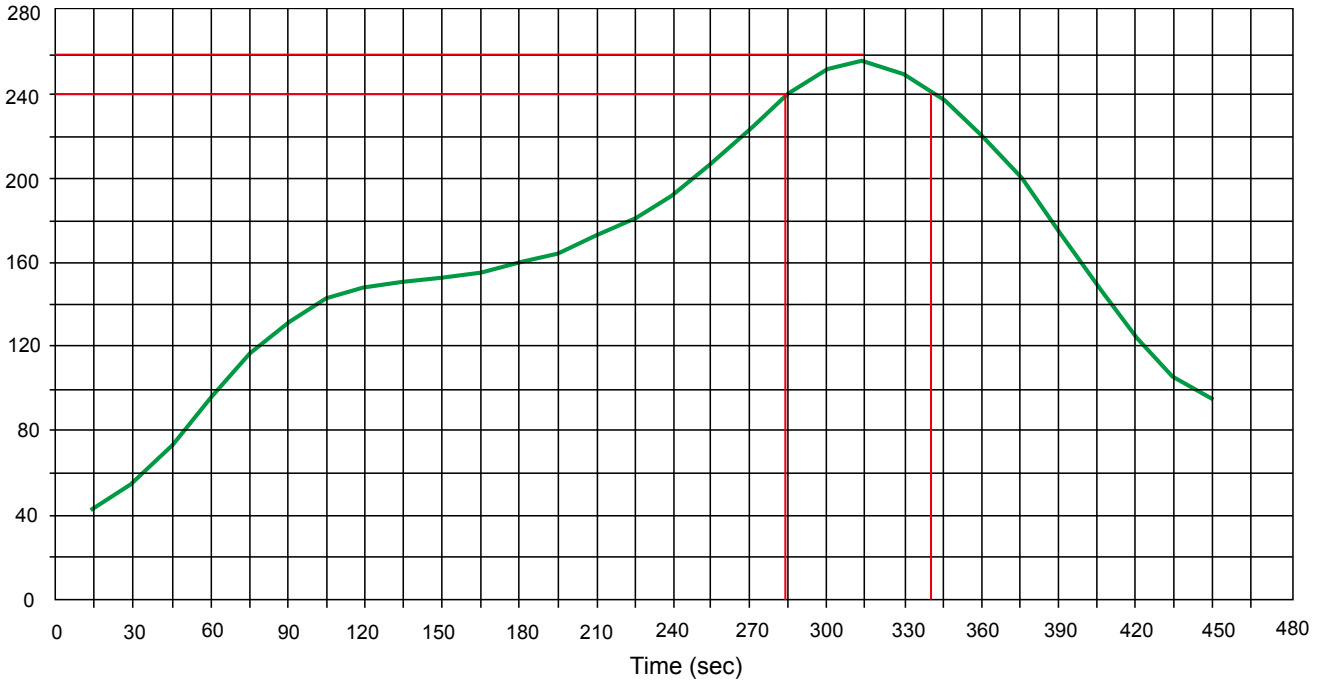


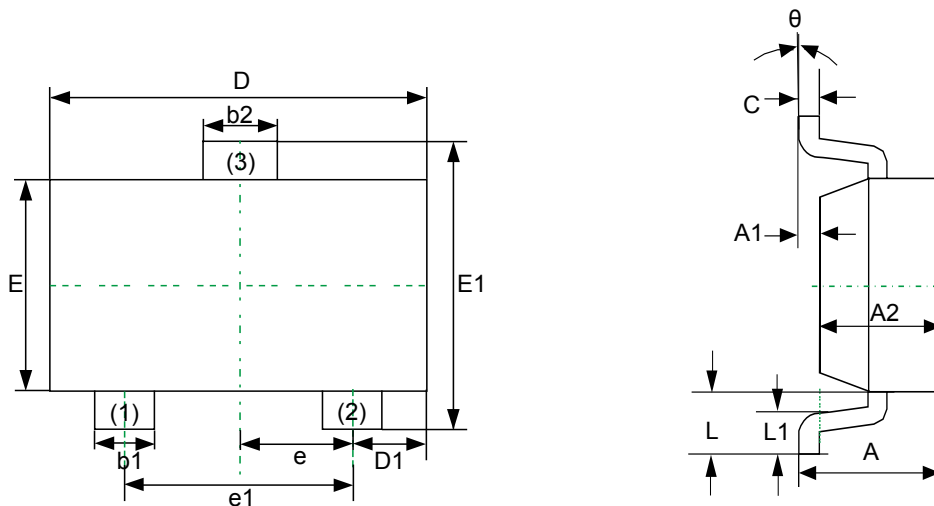
Fig6. Switching Times Resistive Load

Solder Reflow Recommendation

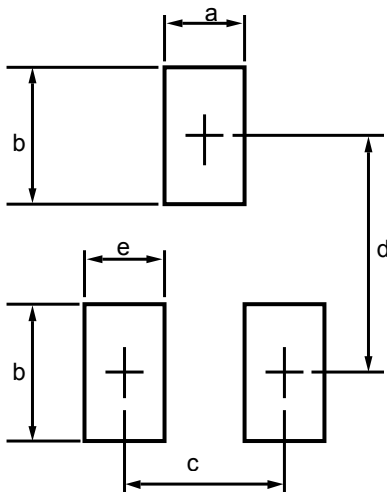
Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



Product dimension (SOT-523)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
D1	0.300	0.500	0.012	0.020
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500TYP		0.020TYP	
e1	0.900	1.100	0.035	0.043
L	0.400REF		0.016REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°




Dim	Millimeters	
	MIN	MAX
a	--	0.5
b	--	0.6
c	--	1.0
d	--	1.24
e	--	0.4

Ordering information

Device	Package	Shipping
PNTET50V01	SOT-523 (Pb-Free)	3000 / Tape & Reel


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