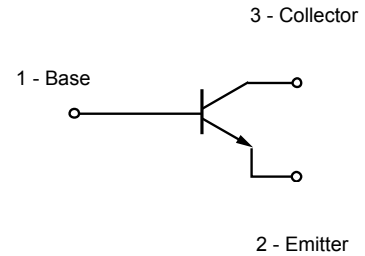


**Feature**

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

- Package: SOT-23
- Emitter -Base Breakdown Voltage 11V
- High DC current gain typical 380
- Low Saturation Voltage 80mv
- 0.15 continuous collector current
- NPN switch 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	Value	Units
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	80	V
Emitter -Base Breakdown Voltage	$V_{(BR)EBO}$	11	V
Collector Current	$I_C$	0.15	A
Total Dissipation @25°C	$P_{tot}$	0.15	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
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=50\mu A$	80			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=1mA$	50			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=50\mu A$		11		V
Collector Cut-off Current ( $I_E=0$ )	$I_{CBO}$	$V_{CB}=60V$			0.1	$\mu A$
Emitter Cut-off Current ( $I_C=0$ )	$I_{EBO}$	$V_{EB}=7V$			0.1	$\mu A$
DC Current Gain	$h_{FE}$	$I_C=1mA, V_{CE}=6V$	250		560	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50mA, I_B=5mA$	-	0.08		V
Transition frequency	$f_T$	$V_{CE}=12V, I_E=-2mA, f=100MHz$		200		MHz
Output Capacitance	$C_{ob}$	$V_{CE}=12V, I_E=0mA, f=1MHz$		2	3.5	pF

Typical Characteristics

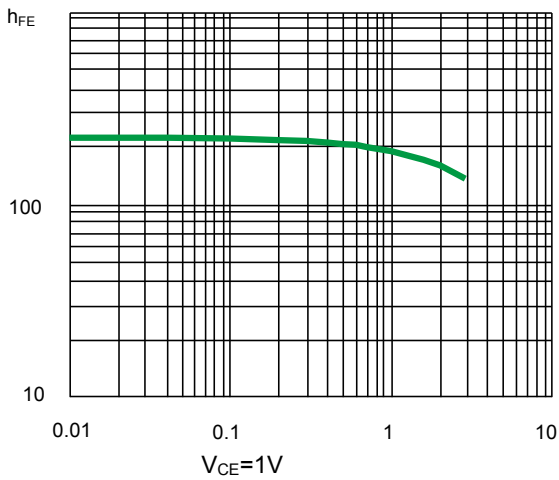


Fig1.DC Current Gain

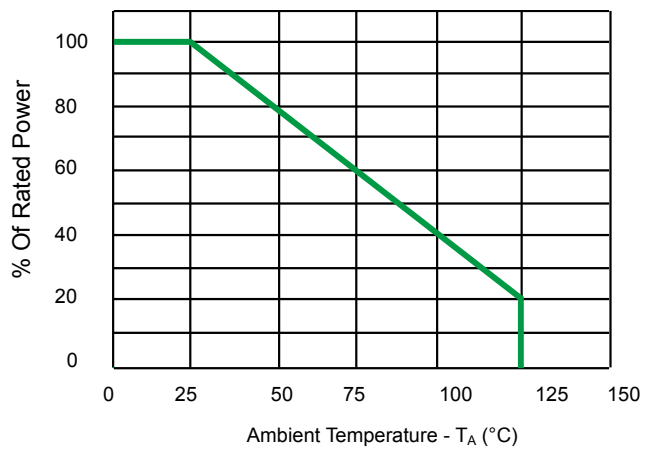


Fig2. Power Derating Curve

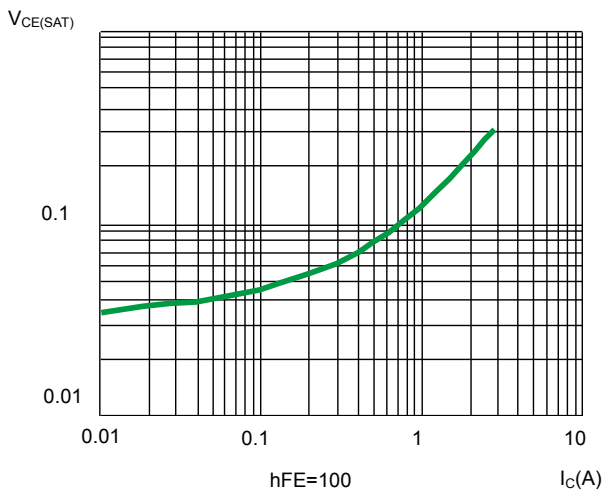


Fig 3.Collector-Emitter Saturation Voltage

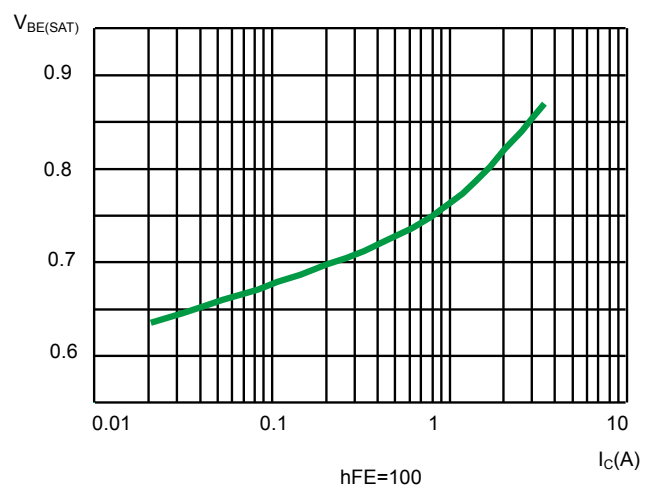


Fig4. Base-Emitter Saturation Voltage

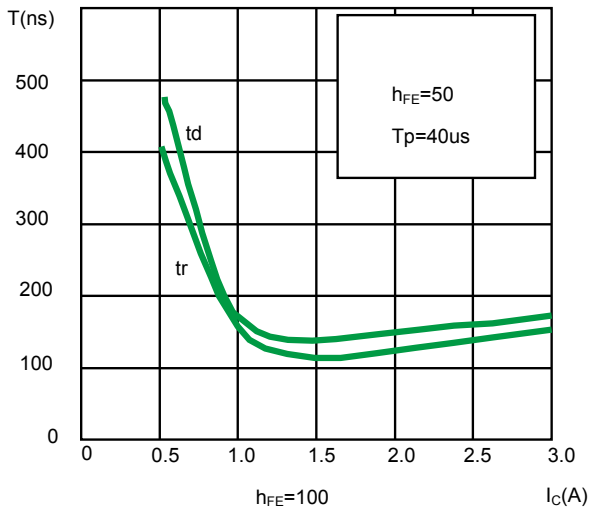


Fig 5. Switching Times Resistive Load

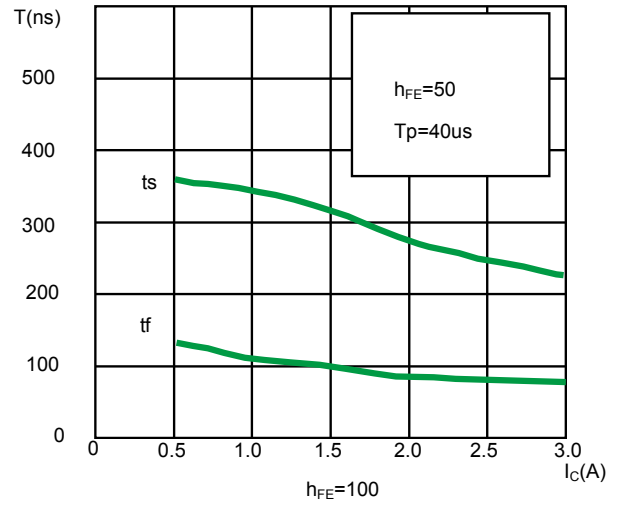
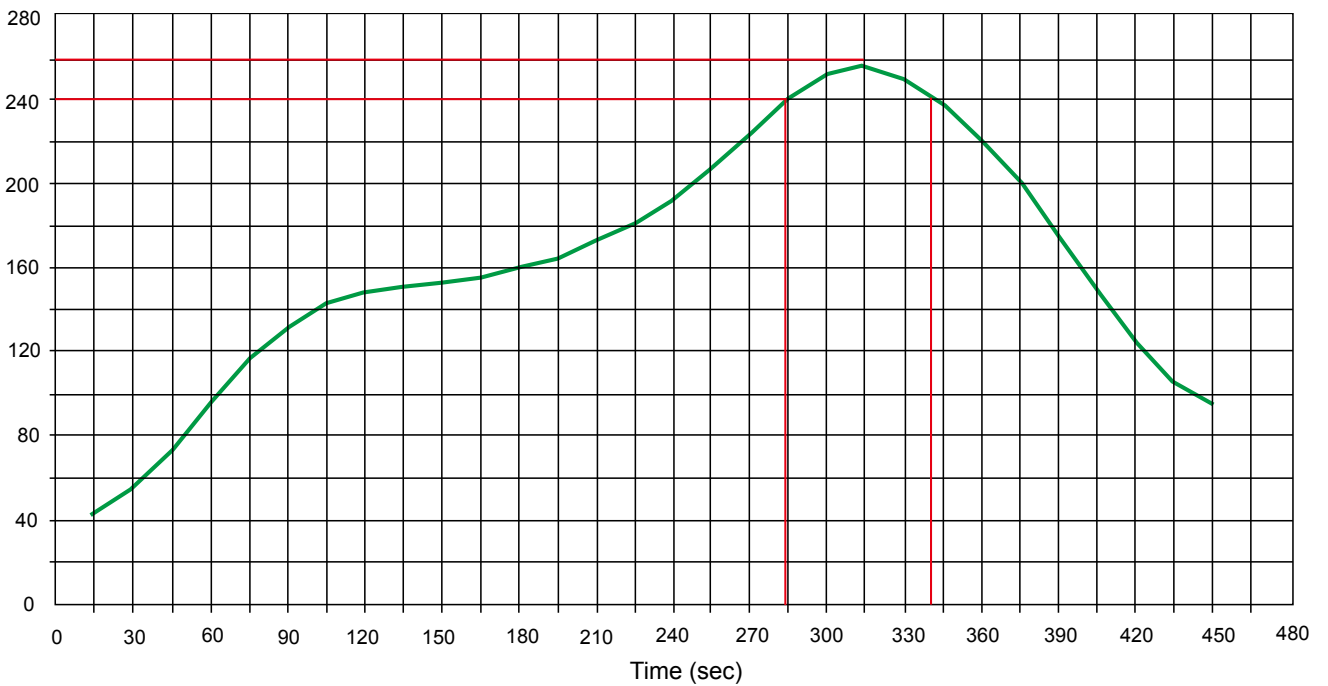


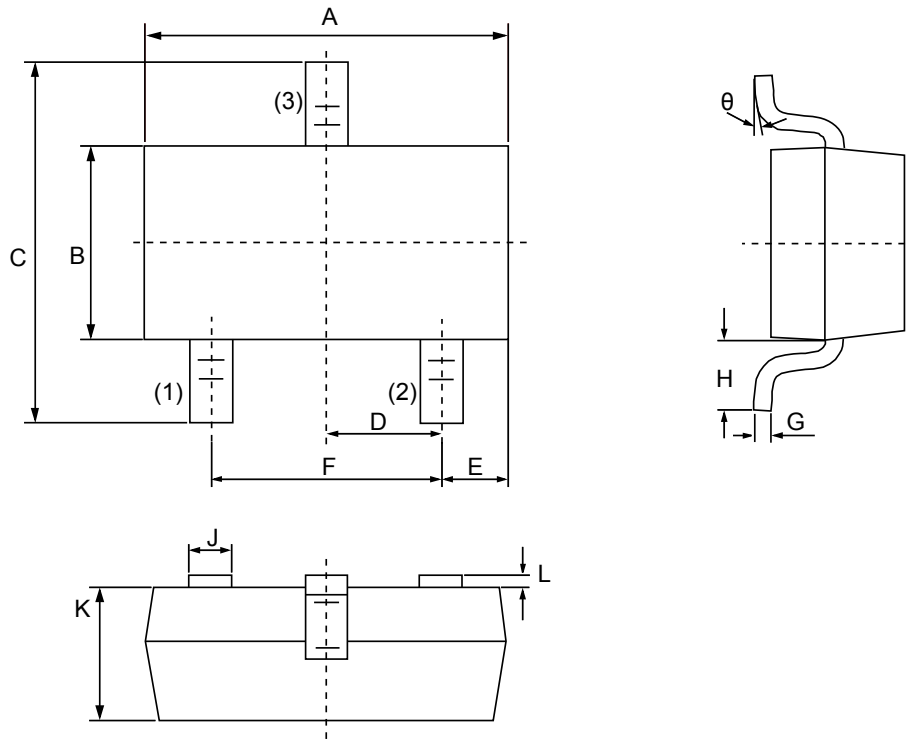
Fig6. Switching Times Resistive Load

### Solder Reflow Recommendation

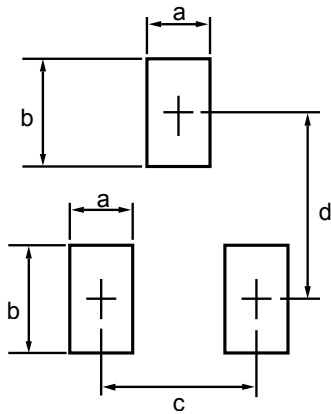
Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



Product dimension(SOT-23)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	2.80	3.00	0.1102	0.1197
B	1.20	1.40	0.0472	0.0551
C	2.10	2.50	0.0830	0.0984
D	0.89	1.02	0.0350	0.0401
E	0.45	0.60	0.0177	0.0236
F	1.78	2.04	0.0701	0.0807
G	0.085	0.177	0.0034	0.0070
H	0.45	0.60	0.0180	0.0236
J	0.37	0.50	0.0150	0.0200
K	0.89	1.11	0.0350	0.0440
L	0.013	0.100	0.0005	0.0040
θ	0°	10°	0°	10°




Dim	Millimeters	
	MIN	MAX
a	--	0.7
b	--	1.2
c	--	2.04
d	--	2.2

### Ordering information

Device	Package	Shipping
PNT23T503E0-2	SOT-23 (Pb-Free)	3000 / Tape & Reel


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