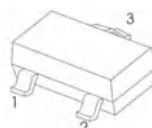


General Description

- Collector-Emitter Voltage: $V_{CEO}=350V$
- Collector Dissipation: $P_{C(max)}=250mW$

SOT-23



3D

- 1.BASE
2.EMITTER
3.COLLECTOR

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Rating ($T_a=25^{\circ}C$)

Parameter	Symbol	Value	Unit
Collector-base voltage	BV_{CBO}	350	V
Collector-emitter voltage	BV_{CEO}	350	V
Emitter-base voltage	BV_{EBO}	6	V
Collector current	I_C	500	mA
Collector power dissipation	P_D	250	mW
Junction temperature	T_j	150	$^{\circ}C$
Storage temperature	T_{stg}	$-55 \sim +150$	$^{\circ}C$

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	350			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1mA, I_B = 0$	350			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu A, I_C = 0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB} = 250V, I_E = 0$			50	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			50	nA
DC current gain	h_{FE}	$V_{CE} = 10V, I_B = 10mA$ $V_{CE} = 10V, I_B = 30mA$ $V_{CE} = 10V, I_B = 50mA$ $V_{CE} = 10V, I_B = 100mA$	30 30 20 10		200 200	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 1mA$ $I_C = 30mA, I_B = 3mA$ $I_C = 50mA, I_B = 5mA$			0.3 0.5 1	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10mA, I_B = 1mA$ $I_C = 30mA, I_B = 3mA$			0.75 0.9	V
Base-emitter on Voltage	$V_{BE(on)}$	$V_{CE} = 10V, I_C = 100mA$			2	V
Transition frequency*	f_T	$V_{CE} = 20V, I_B = 10mA$	40		200	MHz
Output capacitance	C_{ob}	$V_{CE} = 20V, I_E = 0, f = 1MHz$			6	pF

* Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

RATING AND CHARACTERISTIC CURVES

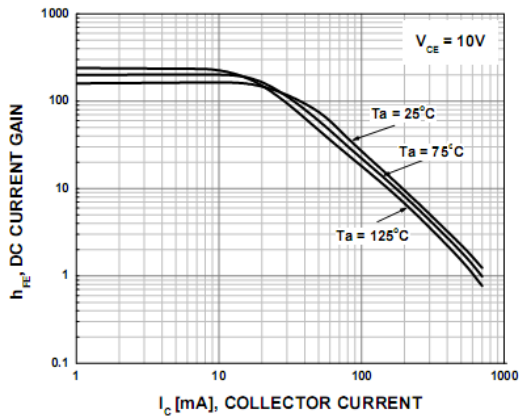


Figure 1. DC current Gain

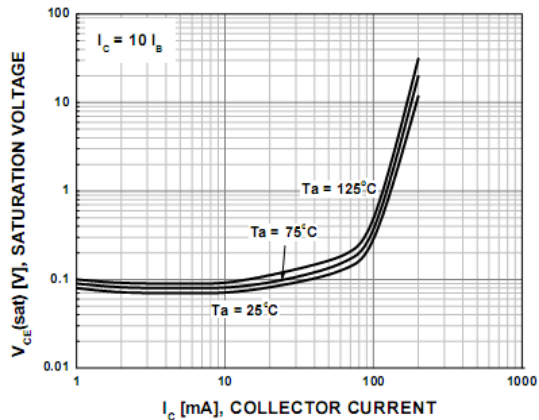


Figure2. Collector-Emitter Voltage

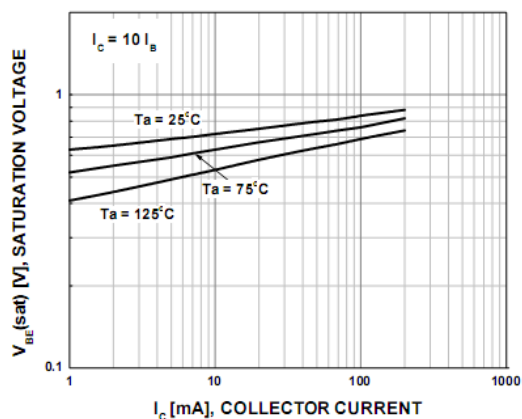


Figure 3. Saturation Voltage

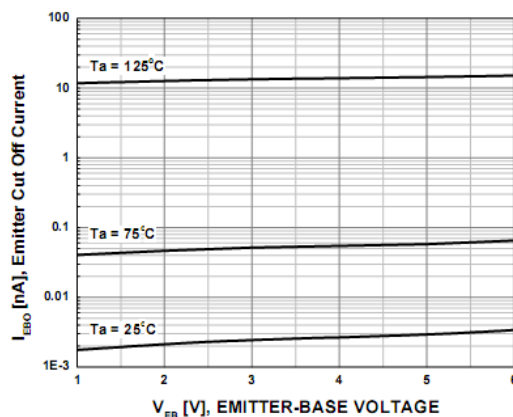


Figure 4. Emitter Cut Off Current

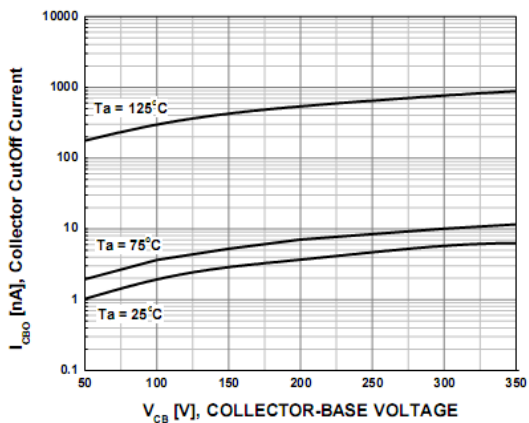


Figure 5. Collector CutOff Current

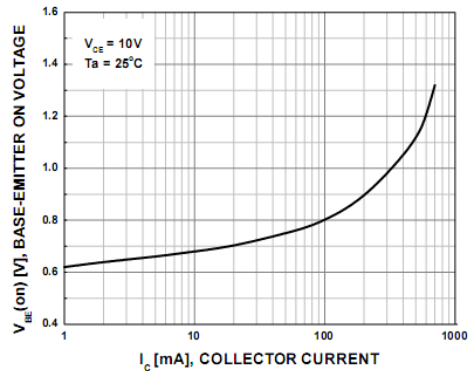


Figure 6. Base-Emitter On Voltage

RATING AND CHARACTERISTIC CURVES

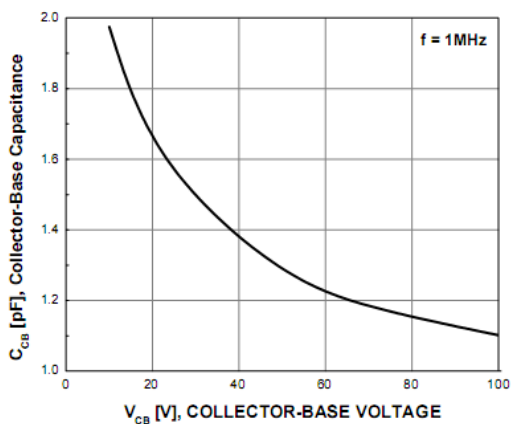


Figure 7. Output Capacitance

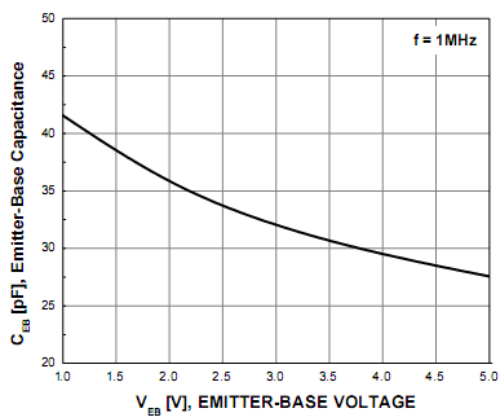


Figure 8. Input Capacitance

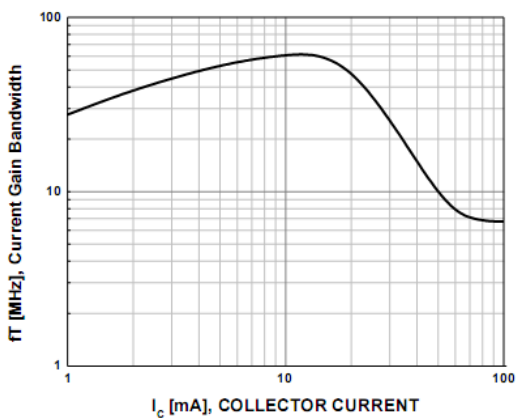


Figure 9. Current Gain Bandwidth Product

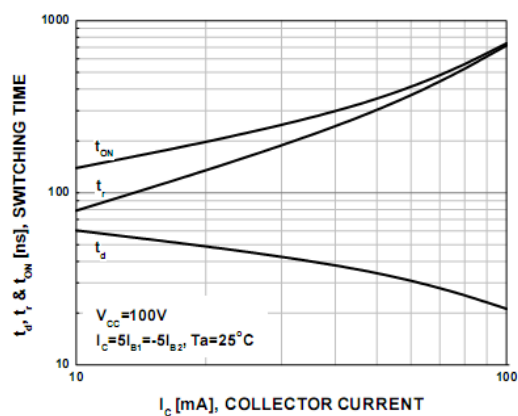


Figure 10. Resistive Load Switching

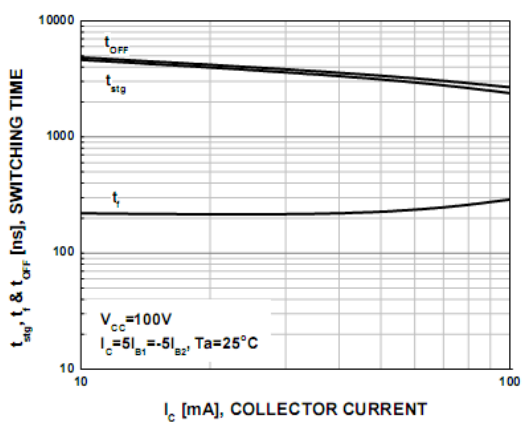
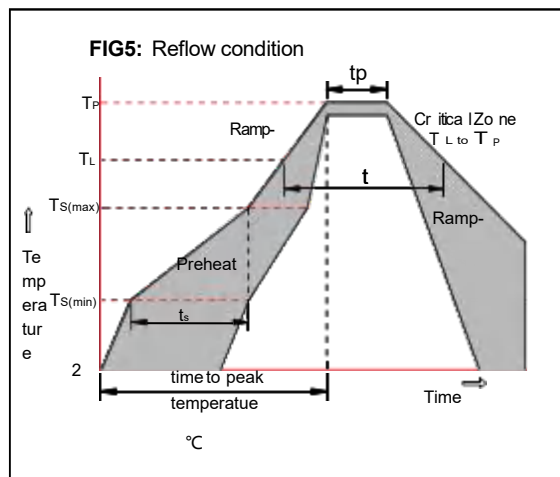


Figure 11. Resistive Load Switching

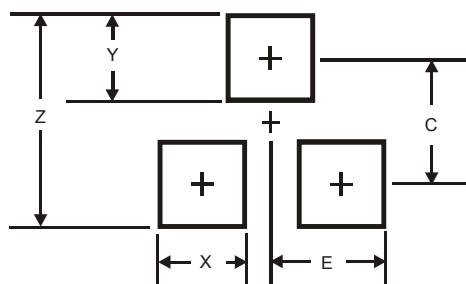
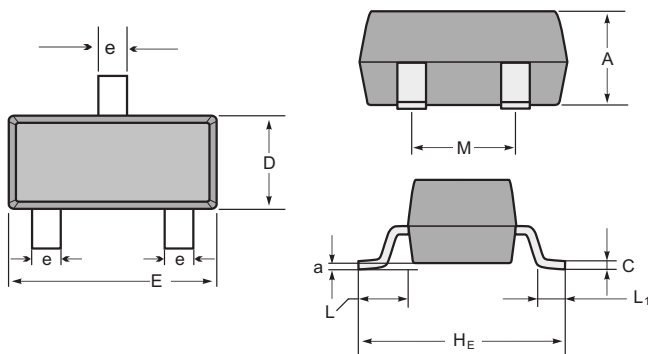
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



Package Dimensions & Suggested Pad Layout

SOT23



SOT-23 mechanical data

UNIT		A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.15
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.0
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	6
	min	35	3	47	110	87	12	67			0.0

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape & reel specification

Tape	Symbol	Dimension (mm)
	P0	4.00±0.10
	P1	4.00±0.10
	P2	2.00±0.10
	D0	1.55±0.10
	D1	1.05±0.10
	E	1.55±0.10
	F	3.60±0.10
	W	8.00±0.10
	A0	3.80±0.20
	B0	3.25±0.20
	K0	1.45±0.10
	T	0.25±0.05
	D2	178.0±3.0
	D3	55Min.
7" Reel	D4	R24.0±3.0
	G	R82.0±3.0
	I	13.0±2.0
	W1	11.0±3.0
	Quantity: 3000PCS	

