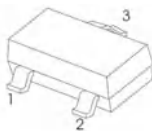
FEATURES

- Switching Transistor

SOT-23



2X

1.BASE
2.EMITTER
3.COLLECTOR

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector–Base Voltage	V_{CBO}	60	V
Collector–Emitter Voltage	V_{CEO}	40	V
Emitter–Base Voltage	V_{EBO}	6	V
Collector Current — Continuous	I_C	600	mA
Collector Power Dissipation	P_C	300	mW
Thermal Resistance From Junction To Ambient	R_{thJA}	417	℃/W
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	℃

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = 100uA, I_E = 0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 1 mA, I_B = 0	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E = 100uA, I_C = 0	6			V
Collector cut-off current	I_{CBO}	V_{CB} = 50V, I_E = 0			0.1	uA
Collector cut-off current	I_{CEX}	V_{CE} = 35V, V_{EB} =0.4V			0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB} = 5V, I_C =0			0.1	uA
DC current gain	h_{FE1}	V_{CE} = 1V, I_C=0.1mA	20			
	h_{FE2}	V_{CE} = 1V, I_C=1mA	40			
	h_{FE3}	V_{CE} = 1V, I_C=10mA	80			
	h_{FE4}	V_{CE} = 1V, I_C = 150mA	100		300	
	h_{FE5}	V_{CE} = 2V, I_C = 500mA	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 150mA, I_B = 15mA			0.4	V
		I_C = 500mA, I_B = 50mA			0.75	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = 150mA, I_B = 15mA			0.95	V
		I_C = 500mA, I_B = 50mA			1.2	V
Transition frequency	f_T	V_{CE} = 10V, I_C = 20mA, f=100MHz	250			MHz
Delay time	t_d	V_{CC}=30V,$V_{BE(off)}$=-2V I_C=150mA,I_{B1}=15mA			15	ns
Rise time	t_r				20	ns
Storage time	t_s	V_{CC} = 30V, I_C = 150mA I_{B1}=I_{B2}=15mA			225	ns
Fall time	t_f				60	ns

RATING AND CHARACTERISTIC CURVES

Fig.1 Static characteristics

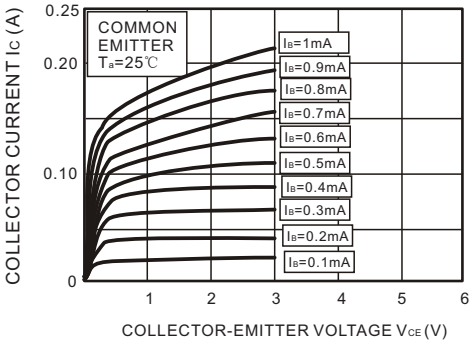


Fig.2 Pc—— Ta

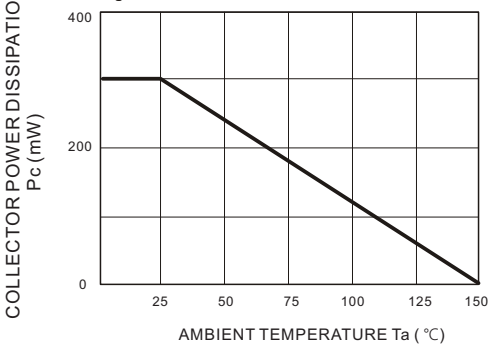


Fig.3 Cob / Cib —— VCB / VEB

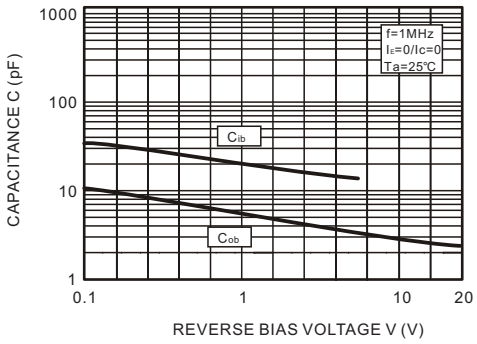


Fig.4 VCEsat —— Ic

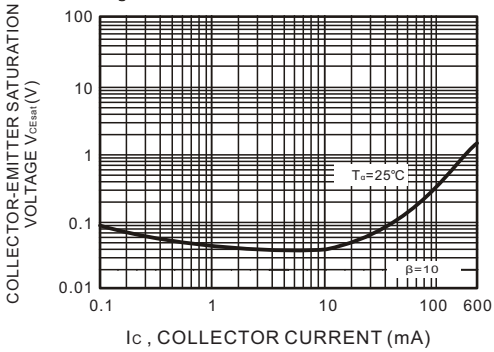


Fig.5 hFE--Ic

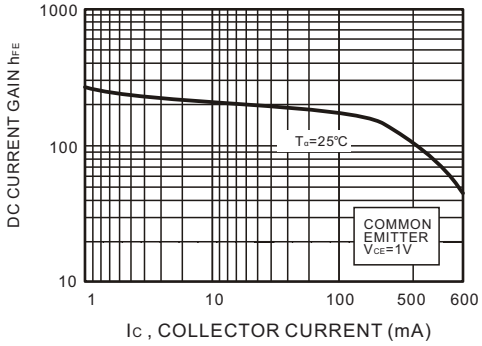


Fig.6 VBEsat —— Ic

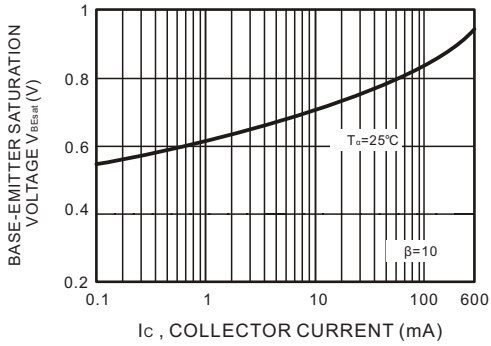


Fig.7 Ic —— VBE

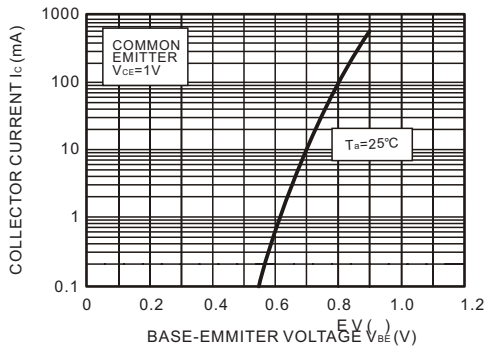
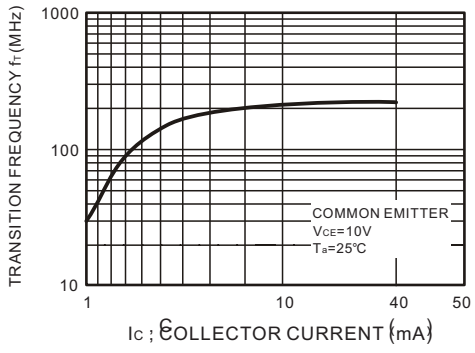


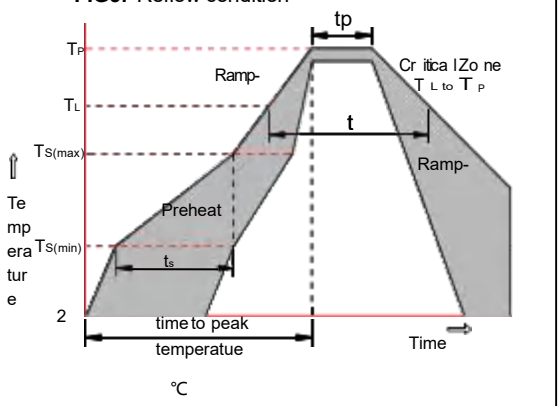
Fig.8 fT —— Ic



Soldering parameters

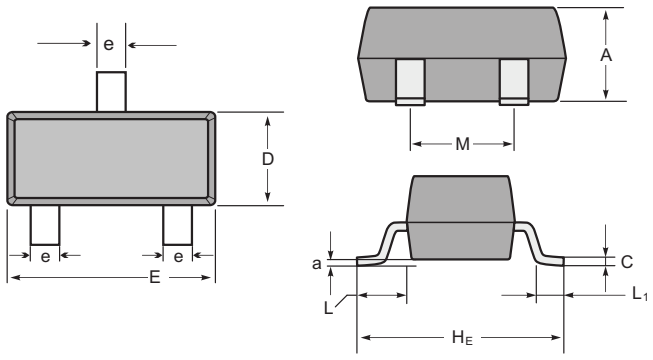
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid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

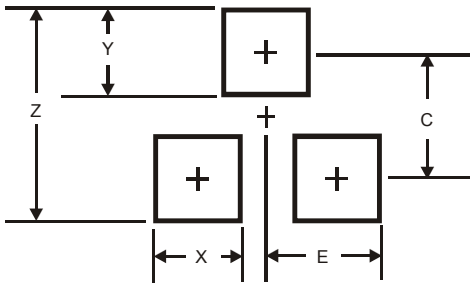
FIG5: Reflow condition



Package Dimensions & Suggested Pad Layout

SOT23





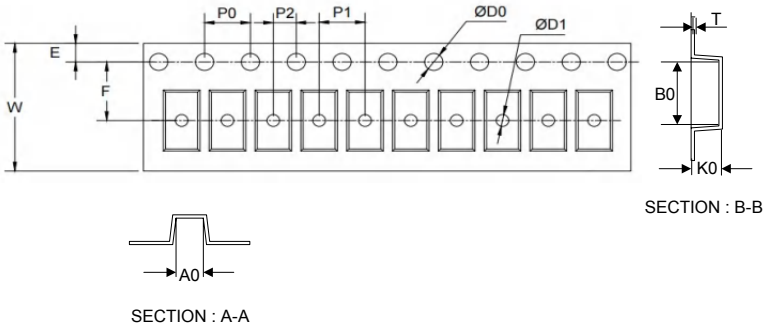
SOT-23 mechanical data

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)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

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

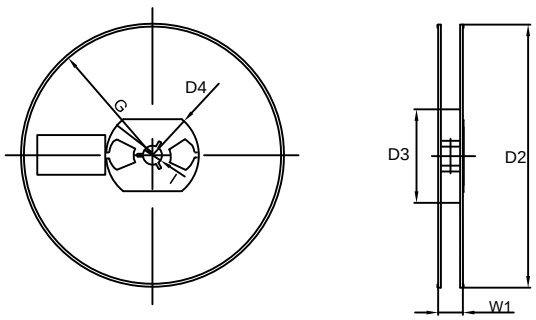
Tape & rell specification

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

7” Reel



D2	178.0±3.0
D3	55Min.
D4	R24.0±3.0
G	R82.0±3.0
I	13.0±2.0
W1	11.0±3.0
Quantity: 3000PCS	