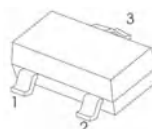




FEATURES

- Complementary to S9015

SOT-23



M6

1.BASE
2.EMITTER
3.COLLECTOR

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	-45	Vdc
Collector–Base Voltage	V_{CBO}	-50	Vdc
Emitter–Base Voltage	V_{EBO}	-5.0	Vdc
Collector Current — Continuous	I_c	-100	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR– 5 Board, (1) $T_A = 25^\circ\text{C}$	P_D	200	mW
Junction and Storage Temperature	T_J, T_{stg}	- 55 to +150	$^\circ\text{C}$

CLASSIFICATION OF h_{FE}

Rank	L	H
Range	200-450	400-1000

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

OFF CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
Collector–Emitter Breakdown Voltage(3) (IC = -0.1 mA _{dc} , IB = 0)	V _{(BR)CEO}	-45	—	V _{dc}
Collector–Base Breakdown Voltage (IC = -100 μA _{dc} , IE = 0)	V _{(BR)CBO}	-50	—	V _{dc}
Emitter–Base Breakdown Voltage (IE = -100 μA _{dc} , IC = 0)	V _{(BR)EBO}	-5.0	—	V _{dc}
Collector cut-off current (VCB = -50 V _{dc} , IE = 0)	ICBO	—	-0.1	uA _{dc}
Emitter cut-off current (VEB = -5V _{dc} , IC = 0)	IEBO	—	-0.1	uA _{dc}

1. FR-5 = 1.0 x 0.75 x 0.062 in.

2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

3. Pulse Test: Pulse Width <300 μs, Duty Cycle <2.0%.

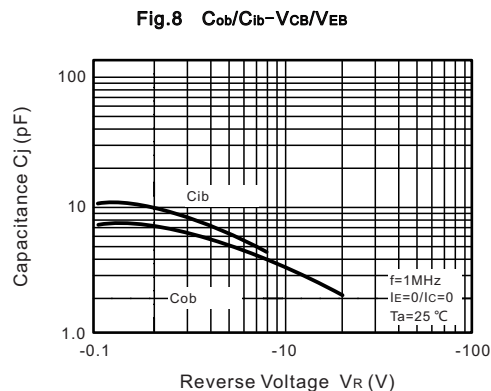
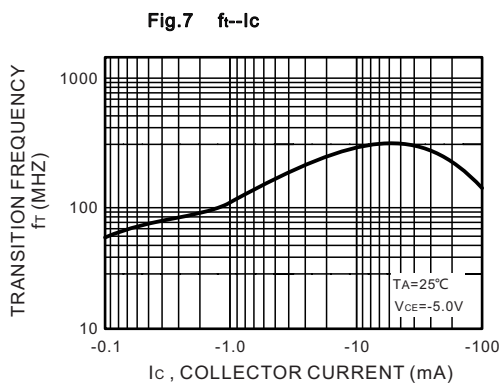
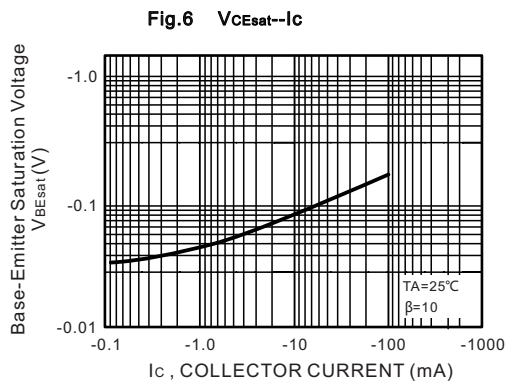
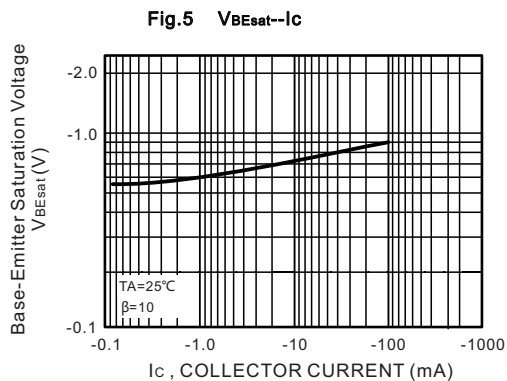
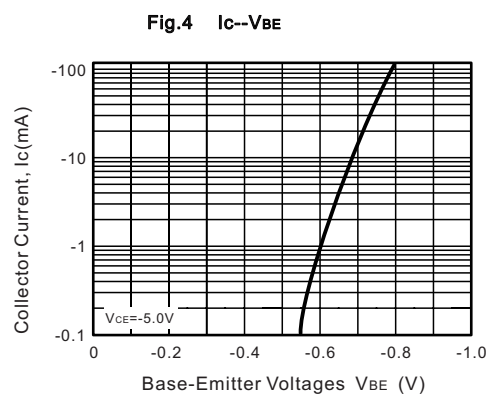
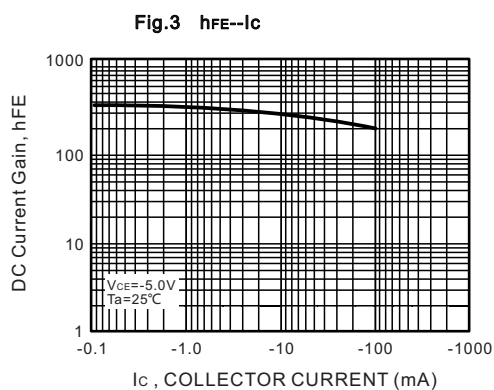
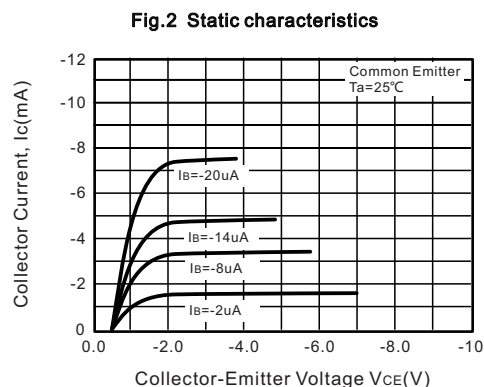
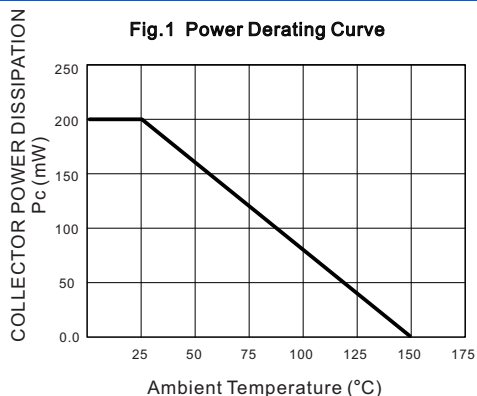
ON CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
DC Current Gain	h _{FE}			—
(IC = -1.0 mA _{dc} , VCE = -5 V _{dc})		200	1000	
Collector–Emitter Saturation Voltage	VCE(sat)			V _{dc}
(IC = -100 mA _{dc} , IB = -10 mA _{dc})(3)		—	-0.3	
Base–Emitter Saturation Voltage(3)	VBE(sat)			V _{dc}
(IC = -100 mA _{dc} , IB = -10mA _{dc})		—	-1.0	

SMALL–SIGNAL CHARACTERISTICS

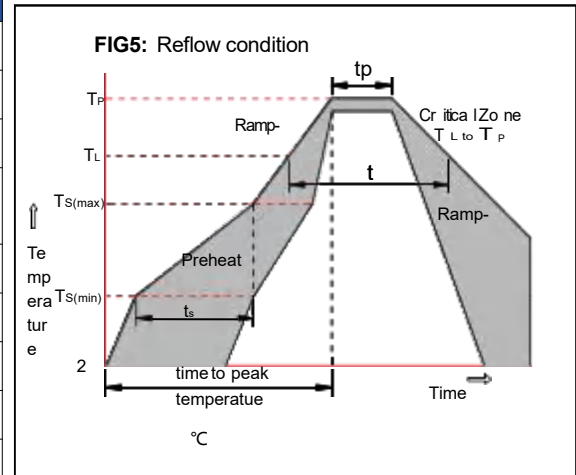
Current–Gain — Bandwidth Product (IC = -10mA _{dc} , VCE = -5.0V _{dc} , f = 30MHz)	f _T	150	—	MHz
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RATING AND CHARACTERISTIC CURVES



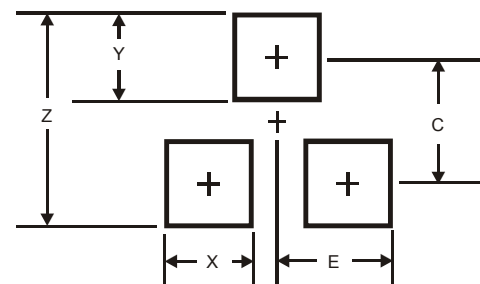
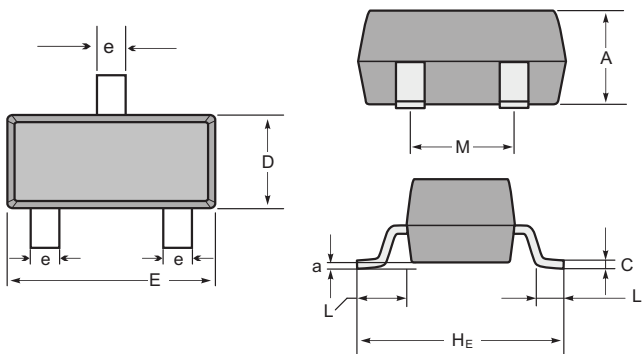
Soldering parameters

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)
	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)
	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 & reel specification

Technical drawing of a tape component. The top view shows a series of rectangular components with circular features, labeled with dimensions P0, P2, P1, ØD0, and ØD1. The side view shows the profile of the tape with dimensions E, F, W, B0, K0, and T. The cross-sectional view (SECTION: A-A) shows the internal structure with dimension A0. The section label 'SECTION: B-B' is also present.

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.
D4	R24.0±3.0
G	R82.0±3.0
I	13.0±2.0
W1	11.0±3.0

Technical drawing of a 7 inch Reel. The top view shows a circular reel with dimensions D4, G, and I. The side view shows the profile of the reel with dimensions D3, D2, and W1.

Quantity: 3000PCS