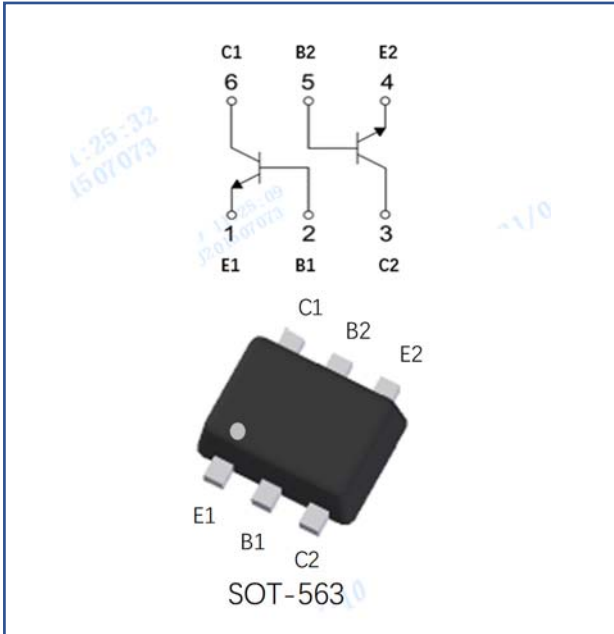


Dual NPN Small Signal Transistor



Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic Insertion

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package:** SOT-563
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				X1
Collector-base voltage	V _{CB0}	V	I _C =50uA, I _E =0	60
Collector-emitter voltage	V _{CE0}	V	I _C =1mA, I _B =0	50
Emitter-base voltage	V _{EB0}	V	I _E =50uA, I _C =0	7
Collector current	I _C	mA		150
Power dissipation	P _D	mW		150
Junction temperature	T _J	°C		-55 to +150
Storage temperature	T _{STG}	°C		-55 to +150



■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V _{(BR)CBO}	V	I _C =50uA, I _E =0	60		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =1mA, I _B =0	50		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =50uA, I _C =0	7		
Collector cut-off current	I _{CBO}	nA	V _{CB} =60V, I _B =0			100
Emitter-base cutoff current	I _{EBO}	nA	V _{EB} =7V, I _C =0			100
DC current gain	h _{FE}		V _{CE} =6V, I _C =1mA	120		560
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =50mA, I _B =5mA			0.4
Transition frequency	f _T	MHz	V _{CE} =12V, I _C =-2mA, f=100MHz		180	
Output capacitance	C _{ob}	pF	V _{CB} =12V, I _E =0A, f=1MHz		2	3.5

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	833
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	667

Note:

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 25.4mm*25.4mm copper pad areas

■ Characteristics

Fig 1: Static Characteristics

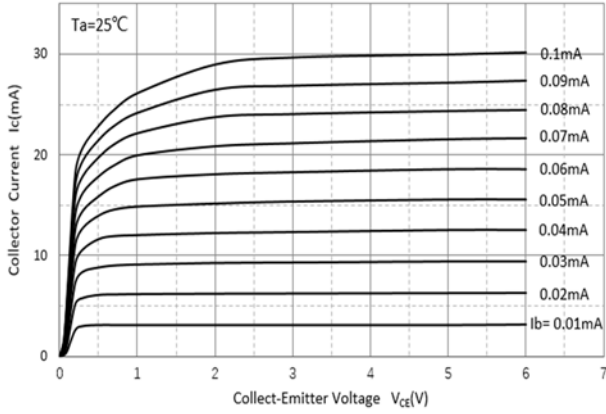


Fig 2: DC Current Gain Characteristics

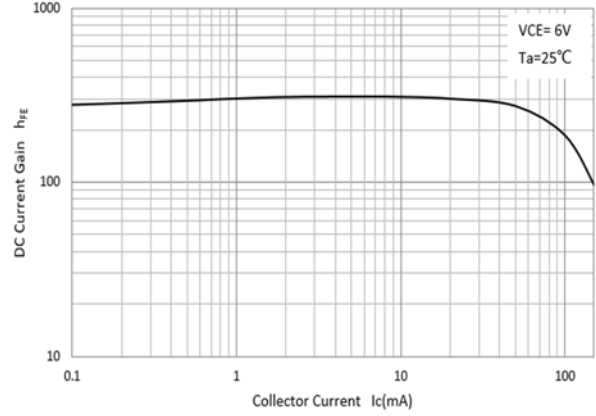


Fig 3: Collector-Emittor Saturation Voltage

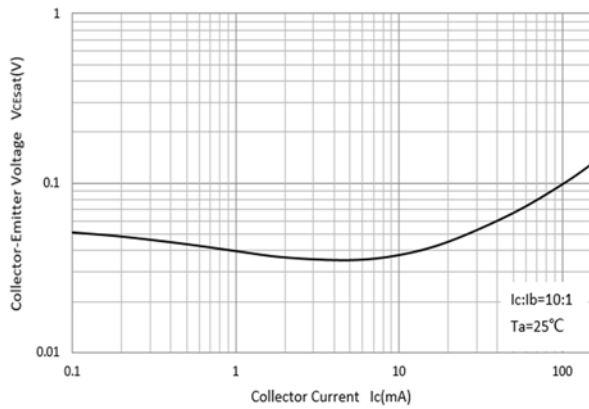


Fig 4: Base-Emittor Saturation Voltage

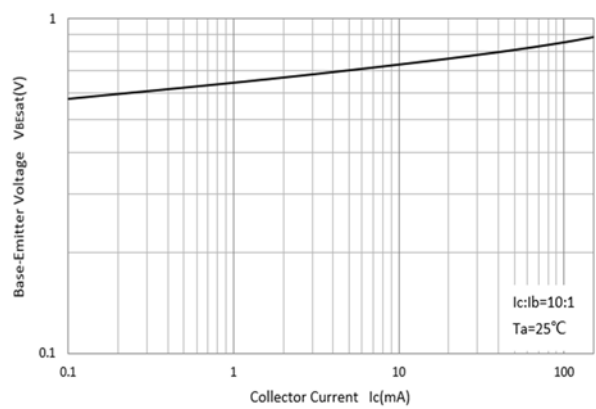


Fig 5: Base-Emittor Voltage

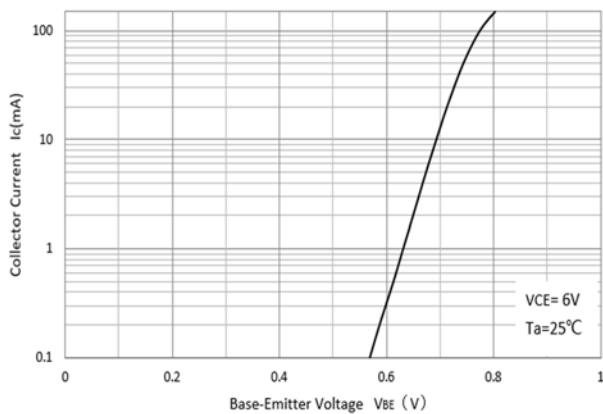


Fig 6: Cob/Cib-V_{CB}/V_{EB}

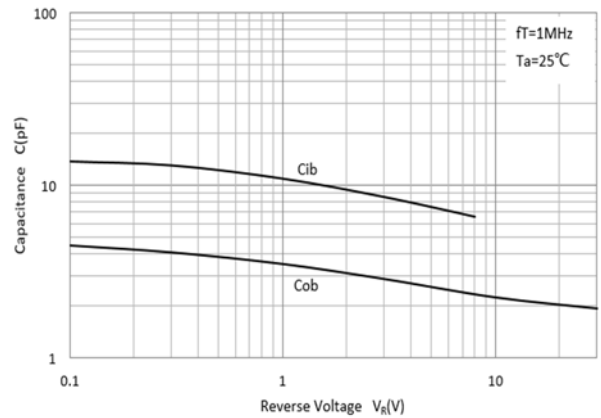
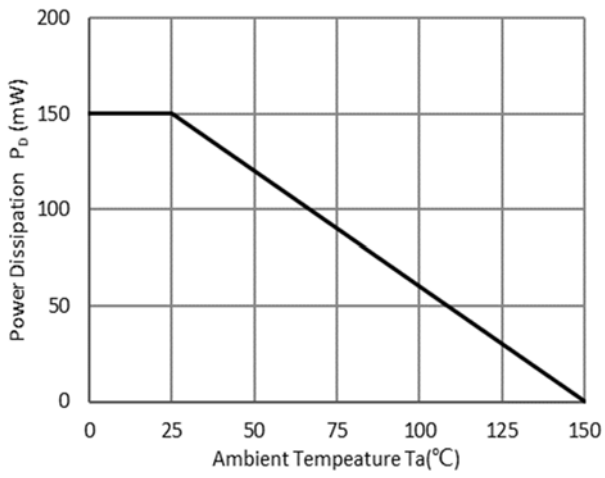




Fig 7: P_D - T_a Curve





EMX1

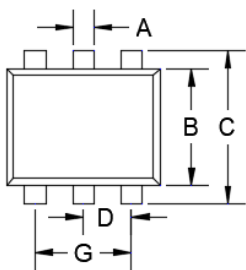
RoHS
COMPLIANT

Ordering Information

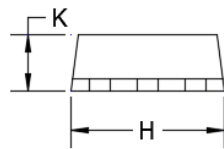
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
EMX1	F2	Approximate 0.0035	3000	30000	120000	7" reel

Outline Dimensions

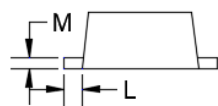
SOT-563



TOP VIEW



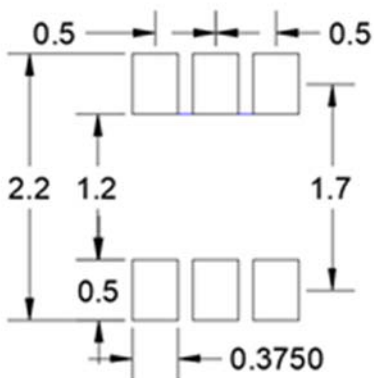
SIDE VIEW



SIDE VIEW

DIM	DIMENSIONS			
	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.006	0.011	0.150	0.300
B	0.043	0.051	1.100	1.300
C	0.059	0.067	1.500	1.700
D	0.016	0.024	0.400	0.600
G	0.035	0.043	0.900	1.100
H	0.059	0.067	1.500	1.700
K	0.021	0.026	0.550	0.650
L	0.004	0.011	0.100	0.300
M	0.004	0.007	0.100	0.180

Suggested Pad Layout



UNIT:mm



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