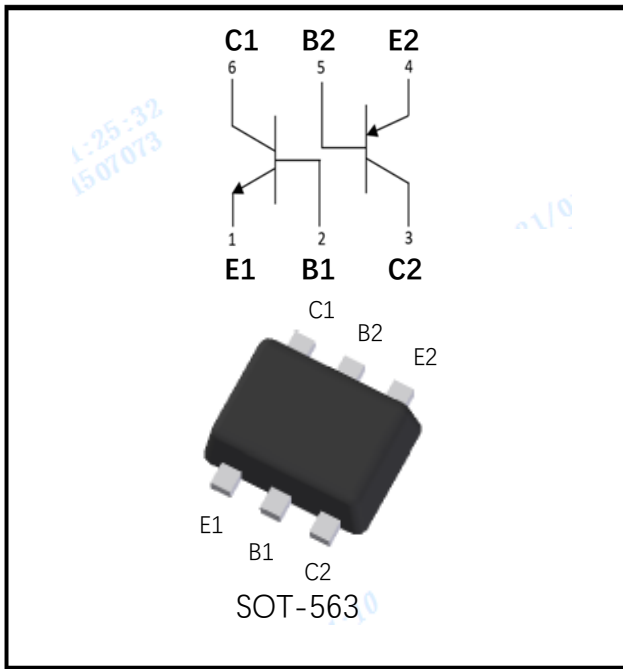


Dual NPN+PNP Small Signal Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating
- Surface mount package ideally Suited for Automatic Insertion
- NPN+PNP

Mechanical Data

- **Package:** SOT-563
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** Z1
- **Solid point:** E1 positioning point

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

DTR1-NPN

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	VCBO	V	IC=50μA,IE=0	60
Collector-Emitter Voltage	VCEO	V	IC =1mA,IB=0	50
Emitter-Base Voltage	VEBO	V	IE=50μA,IC=0	7
Collector Current -Continuous	IC	mA		150
Total Device Dissipation	PC	mW		150
Junction Temperature	Tj	°C		150
Storage Temperature	TSTG	°C		-55 to +150

DTR2-PNP

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	VCBO	V	IC=-50μA,IE=0	-60
Collector-Emitter Voltage	VCEO	V	IC =-1mA,IB=0	-50
Emitter-Base Voltage	VEBO	V	IE=-50μA,IC=0	-6
Collector Current -Continuous	IC	mA		-150
Total Device Dissipation	PC	mW		150
Junction Temperature	Tj	°C		150
Storage Temperature	TSTG	°C		-55 to +150



EMZ1

■ Electrical Characteristics (Ta=25°C unless otherwise specified)

DTR1-NPN

Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	VCBO	V	IC=50μA,IE=0	60		
Collector-emitter breakdown voltage	VCEO	V	IC =1mA,IB=0	50		
Emitter-base breakdown voltage	VEBO	V	IE=50μA,IC=0	7		
Collector cut-off current	ICBO	nA	VCB=60V,IB=0			100
Collector cut-off current	IEBO	nA	VEB=7V, IC=0			100
DC current gain	hFE		VCE=6V,IC=1mA	120		560
Collector-emitter saturation voltage	VCE(sat)	V	IC=50mA,IB=5mA			0.4
Transition frequency	fT	MHz	VCE=12V,IC=-2mA,f=100MHz		180	
Output capacitance	Cob	pF	VCB=12V,IE=0A,f=1MHz		2	3.5

DTR2-PNP

Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	V _{(BR)CBO}	V	IC=-50μA,IE=0	-60		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	IC =-1mA,IB=0	-50		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	IE=-50μA,IC=0	-6		
Collector-Base cut-off current	ICBO	nA	VCB=-60V,IB=0			-100
Emitter-Base cut-off current	IEBO	nA	VEB=-6V,IC=0			-100
DC current gain	hFE		VCE=-6V,IC=-1mA	120		560
Collector-emitter saturation voltage	VCE(sat)	V	IC=-50mA,IB=-5mA			-0.5
Transition frequency	Ft	MHz	VCE=-12V,IE=2mA,f=100MHz		140	
Output capacitance	Cob	pF	VCB=-12V,IE=0A,f=1MHz			5

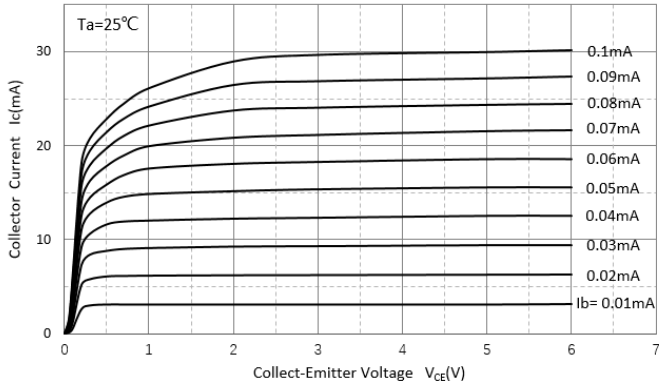
■ Ordering Information (Example)

Preferred P/N	Packing Code	Unit Weight(G)	Minimum Package(Pcs)	Inner Box Quantity(Pcs)	Outer Carton Quantity(Pcs)	Delivery Mode
EMZ1	F2	Approximate 0.0035	3000	30000	120000	7" reel

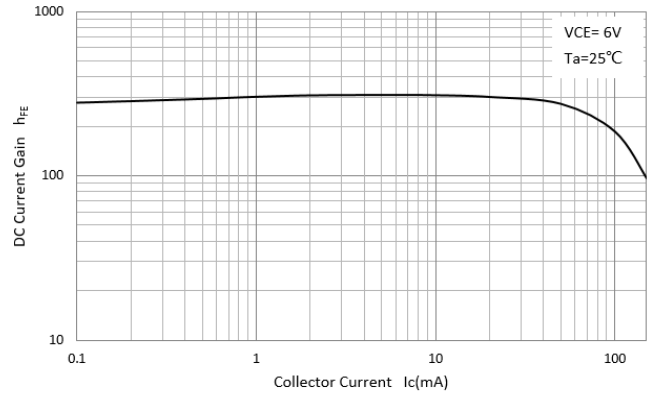


■ Characteristics (Typical) DTR1-NPN

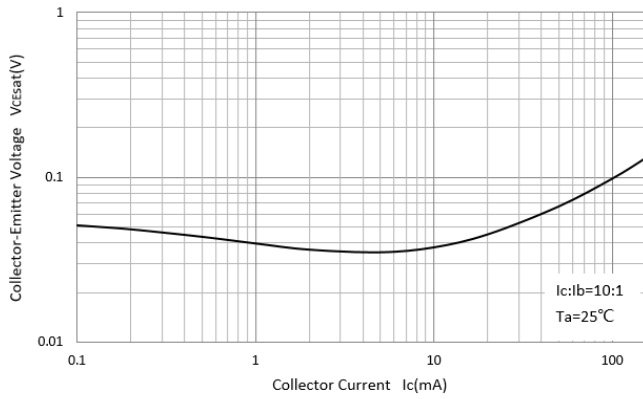
Static Characteristic



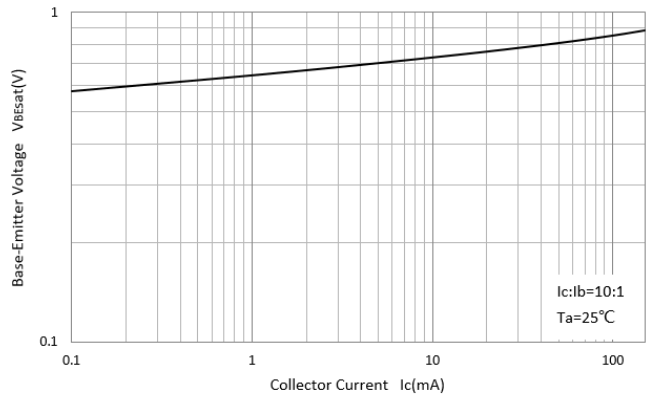
DC Current Gain



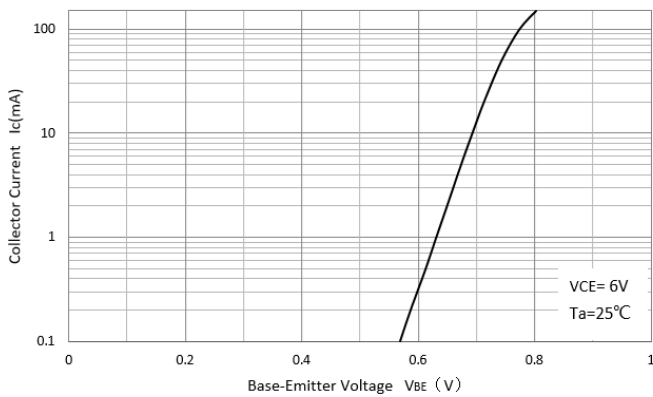
Collector-Emitter Saturation Voltage



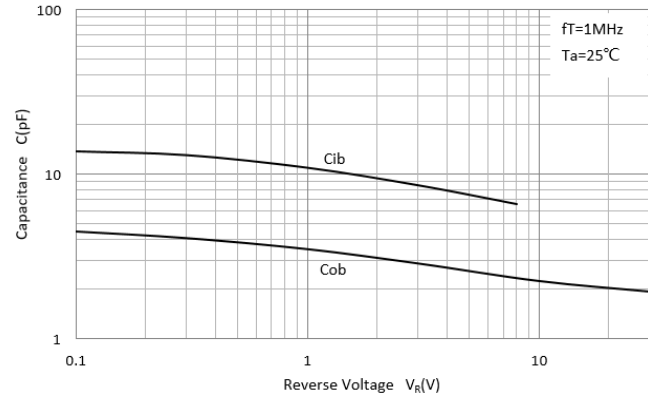
Base-Emitter Saturation Voltage



Base-Emitter On Voltage



$C_{ob}/C_{ib}-V_{CB}/V_{EB}$





DTR2-PNP

Fig. 1 - Static Characteristics

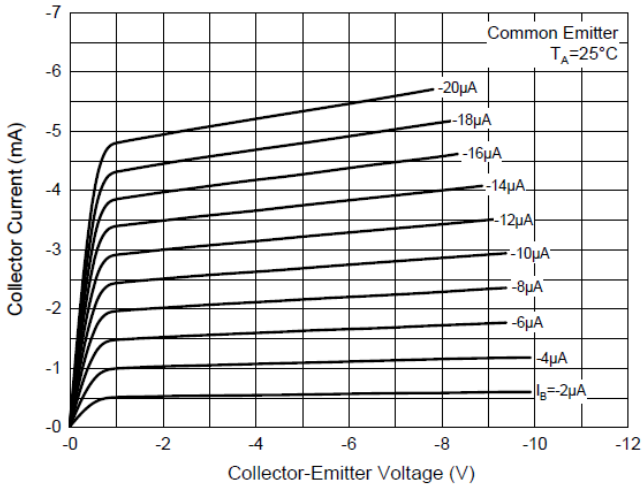


Fig. 2 - DC Current Gain Characteristics

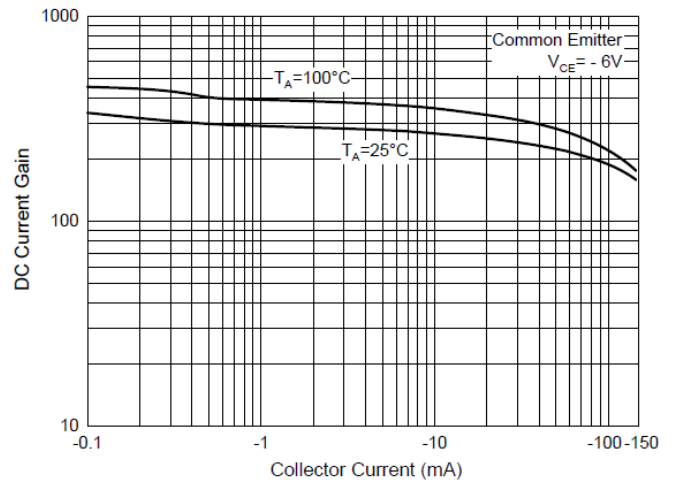


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

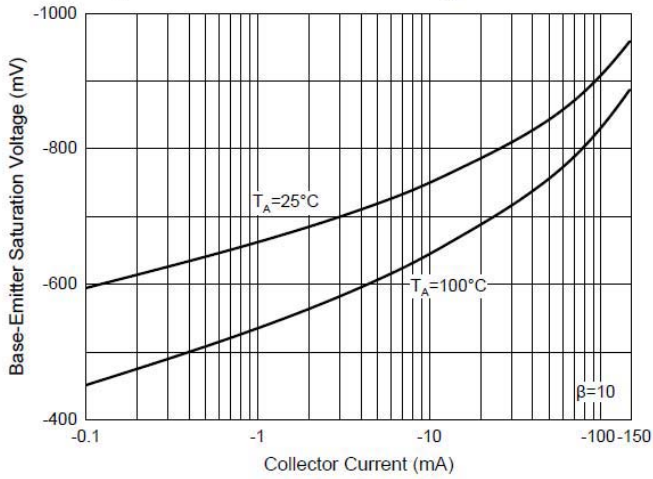


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

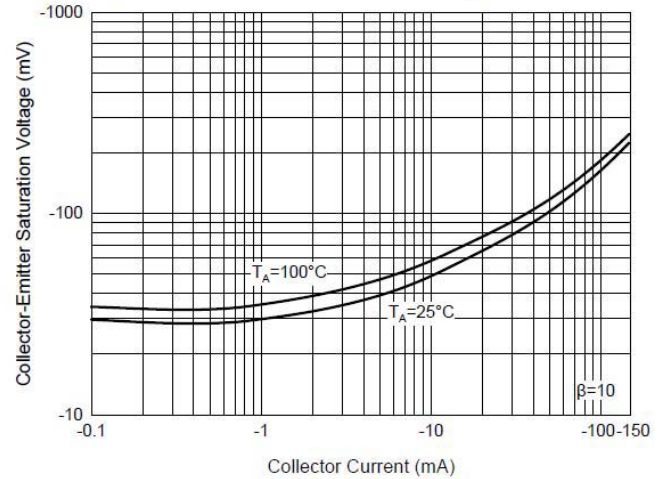
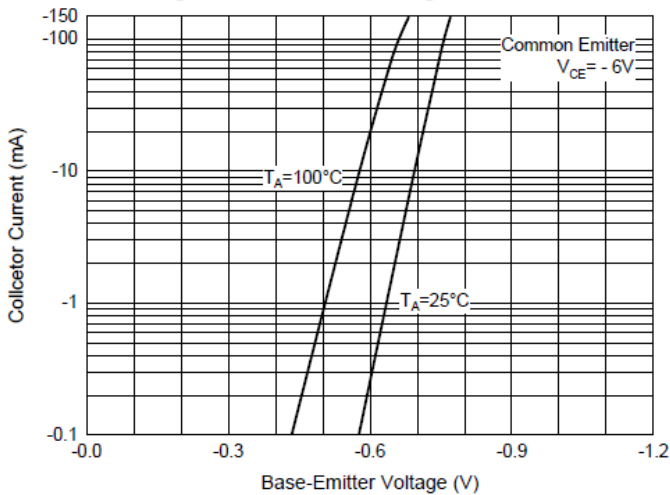
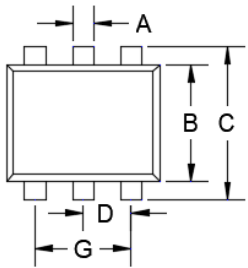


Fig. 11 - Base-Emitter Voltage Characteristics

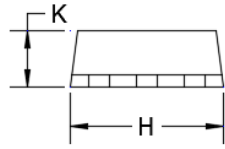


■ Outline Dimensions

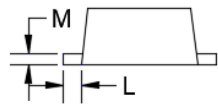
SOT-563



TOP VIEW



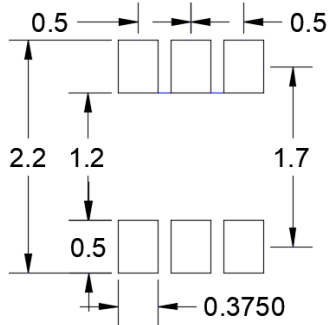
SIDE VIEW



SIDE VIEW

DIMENSIONS				
DIM	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



单位: mm

SUGGESTED SOLDER PAD LAYOUT



EMZ1

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