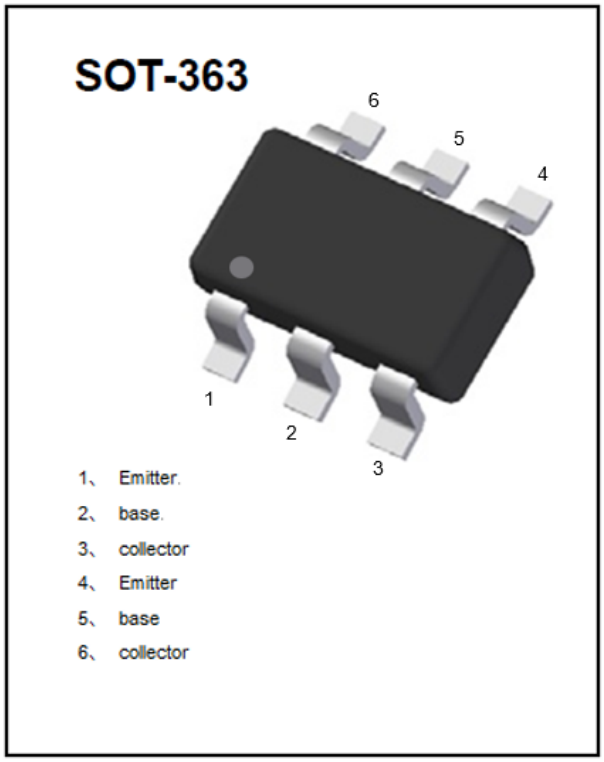
Dual NPN+PNP Small Signal Transistor



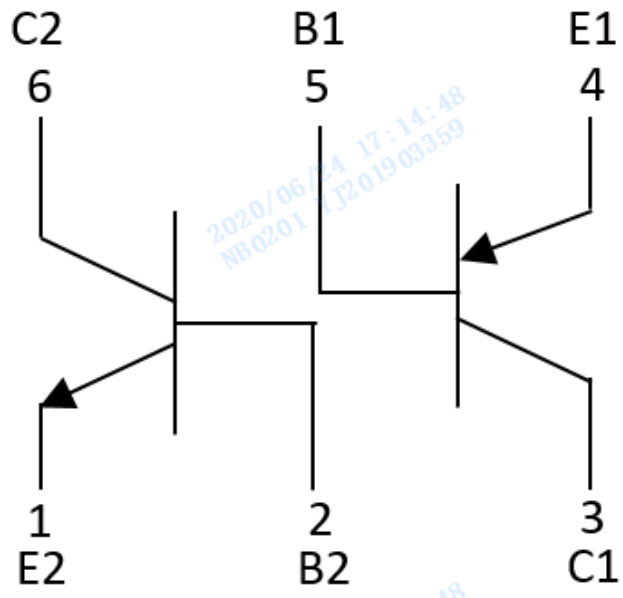
Features

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

Mechanical Data

- **Package:** SOT-363
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** Z1

■Equivalent circuit



■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
UMZ1N	F2	Approximate 0.009g	3000	30000	120000	7" reel

■TR1 NPN Pin1、2、6 Maximum Ratings (Ta=25℃ Unless otherwise specified)

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		200
Junction Temperature	Tj	℃		150
Storage Temperature	TSTG	℃		-55 to +150

■TR1 NPN Pin1、2、6 Electrical Characteristics (Ta=25℃ unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	V_{CBO}	V	IC=50μA,IE=0	60		
Collector-emitter breakdown voltage	V_{CEO}	V	IC =1mA,IB=0	50		
Emitter-base breakdown voltage	V_{EBO}	V	IE=50μA,IC=0	7		
Collector cut-off current	I_{CBO}	nA	VCB=60V,IB=0			100
Collector cut-off current	I_{EBO}	nA	VEB=7V, IC=0			100
DC current gain	h_{FE}		VCE=6V,IC=1mA	120		560
Collector-emitter saturation voltage	$V_{CE(sat)}$	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			3.5

■TR2 PNP Pin3、4、5 Maximum Ratings (Ta=25℃ Unless otherwise specified)

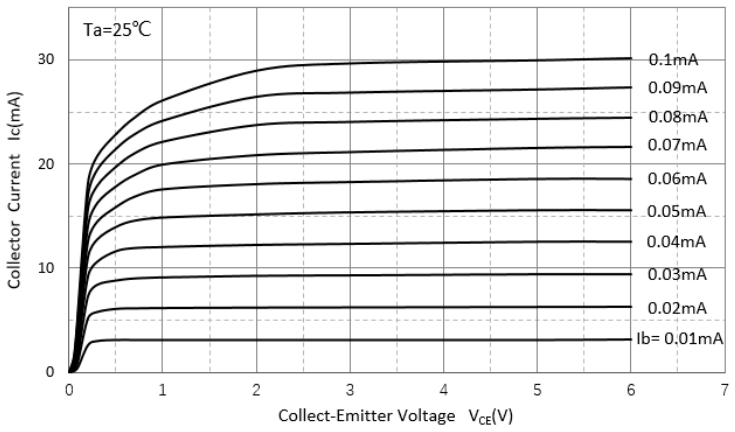
Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	VCBO	V	IC=-50μA,IE=0	-60
Collector-Emitter Voltage	VCEO	V	IC =-1mA,IB=0	-50
Emitter-Base Voltage	VEBO	V	IE=-50μA,IC=0	-6
Collector Current	IC	mA		-150
Total Device Dissipation	PC	mW		200
Junction Temperature	Tj	℃		150
Storage Temperature	TSTG	℃		-55 to +150

■TR2 PNP Pin3、4、5 Electrical Characteristics (Ta=25℃ unless otherwise specified)

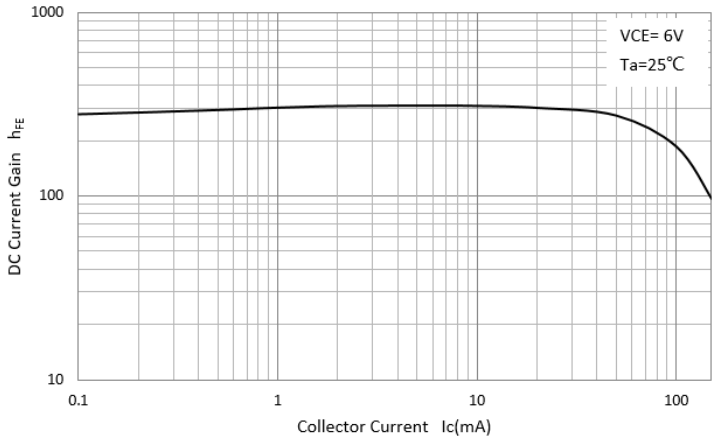
Item	Symbol	Unit	Conditions	Min	TYP	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	IC=-50μA,IE=0	-60		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	IC =-1mA,IB=0	-50		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	IE=-50μA,IC=0	-6		
Collector-Base cut-off current	I_{CBO}	nA	VCB=-60V,IB=0			-100
Emitter-Base cut-off current	I_{EBO}	nA	VEB=-6V,IC=0			-100
DC current gain	h_{FE}		VCE=-6V,IC=-1mA	120		560
Collector-emitter saturation voltage	$V_{CE(sat)}$	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

■ TR1 NPN Pin1、2、6 Characteristics (Typical)

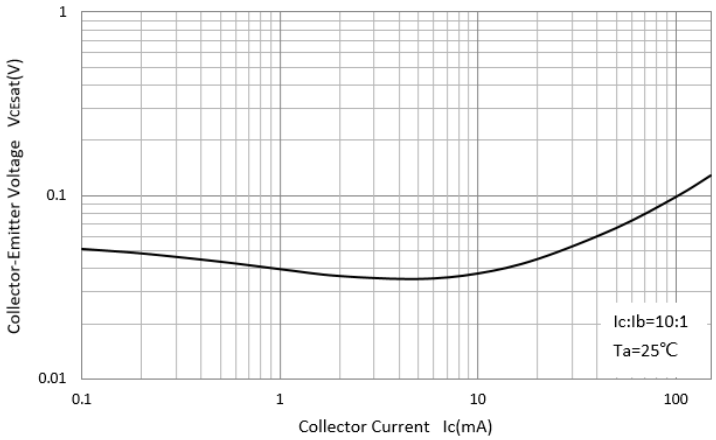
Static Characteristic



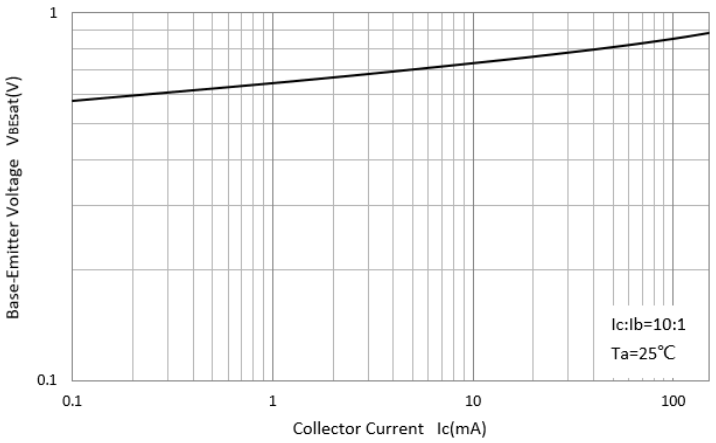
DC Current Gain



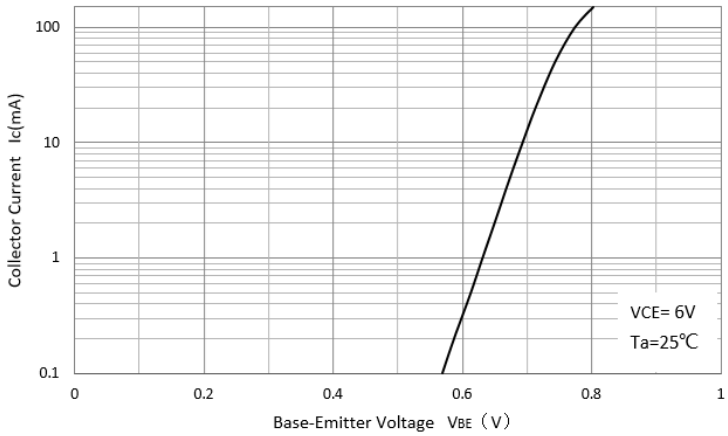
Collector-Emitter Saturation Voltage



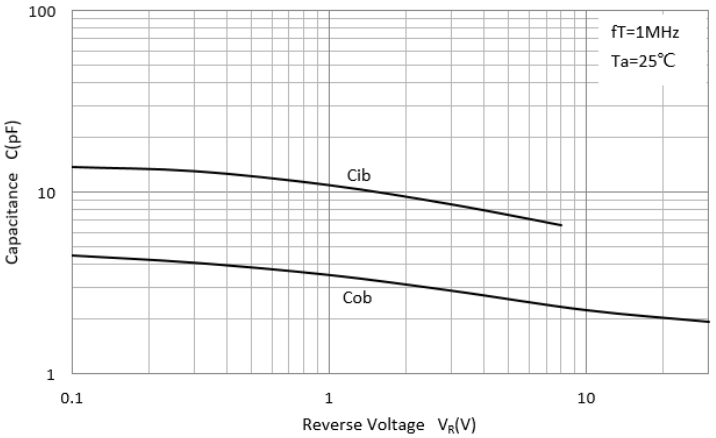
Base-Emitter Saturation Voltage



Base-Emitter On Voltage



Cob/Cib-V_{CB}/V_{EB}



■ TR2 PNP Pin3、4、5 Characteristics (Typical)

Fig. 1 - Static Characteristics

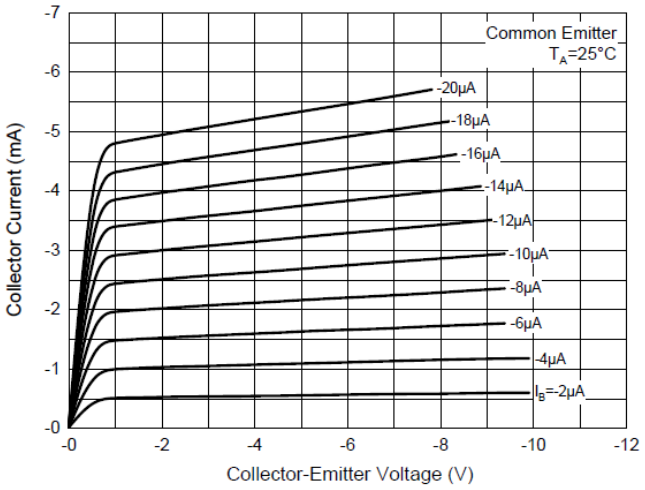


Fig. 2 - DC Current Gain Characteristics

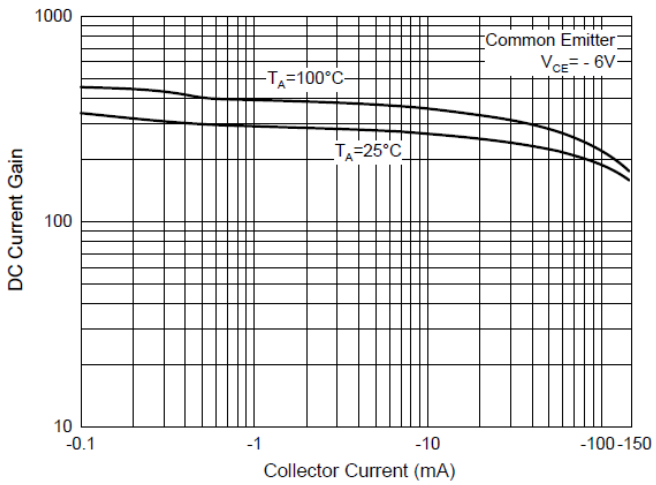


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

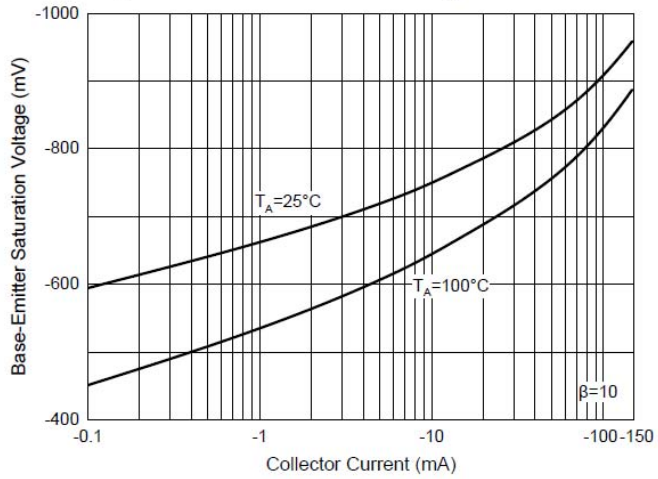


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

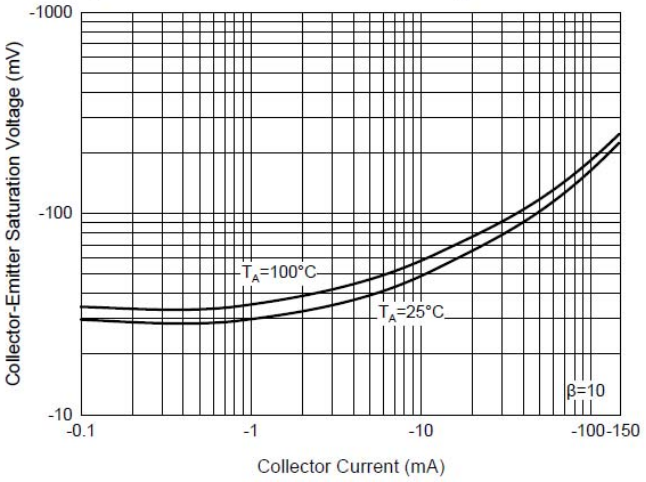
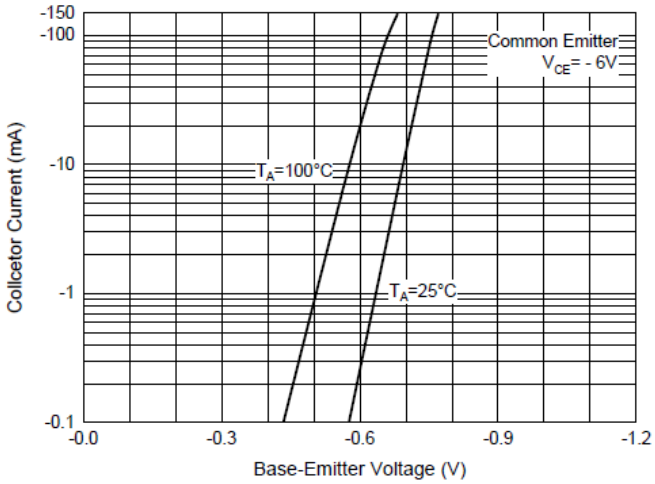
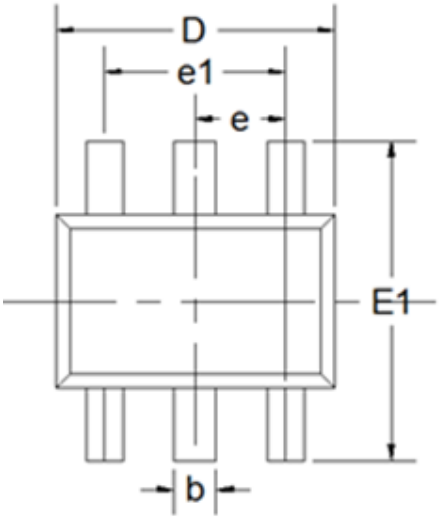


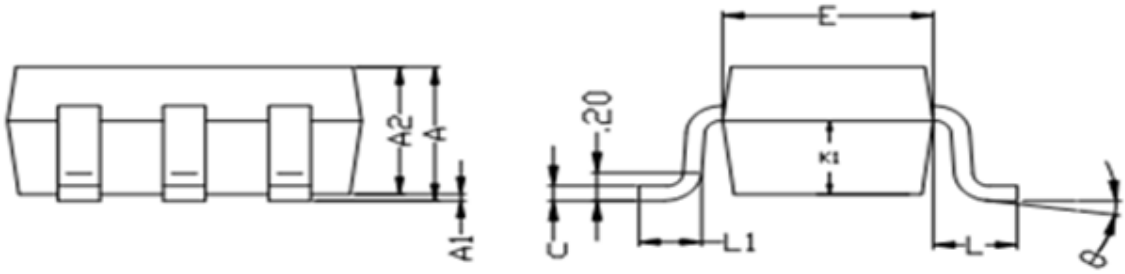
Fig. 11 - Base-Emitter Voltage Characteristics



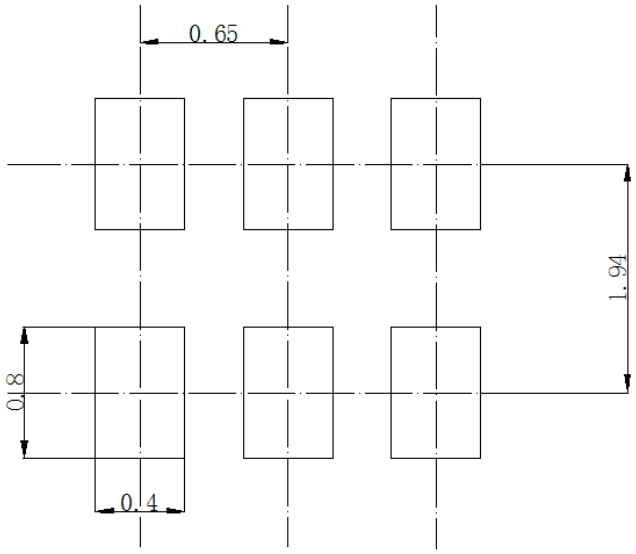
■SOT-363 Package Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.035	0.043	0.9	1.1
A1	0	0.004	0	0.1
A2	0.035	0.039	0.9	1
b	0.006	0.014	0.15	0.35
c	0.002	0.01	0.05	0.25
D	0.071	0.087	1.8	2.2
E	0.045	0.053	1.15	1.35
E1	0.085	0.096	2.15	2.45
e	0.026Typ		0.65Typ	
e1	0.047	0.055	1.2	1.4
L	0.021Typ		0.525Typ	
L1	0.01	0.018	0.26	0.46
θ	0°	8°	0°	8°



■SOT-363 Soldering Footprint



Unit：mm

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