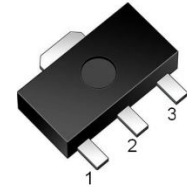


REPLACEMENT TYPE : 2SD965A

FEATURES

- Low Collector-Emitter Saturation Voltage
- Large Collector Power Dissipation and Current
- Mini Power Type Package



SOT-89 MARKING: 965

1:BASE 2:COLLECTOR 3:EMITTER

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	40	V
Collector-Emitter Voltage	V _{CEO}	20	V
Emitter-Base Voltage	V _{EBO}	7	V
Collector Current-Continuous	I _C	5	A
Collector Power Dissipation	P _C	750	mW
Thermal Resistance From Junction to Ambient	R _{θJA}	167	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55 ~150	°C

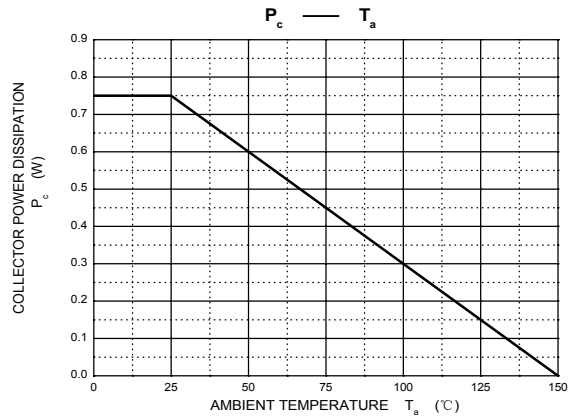
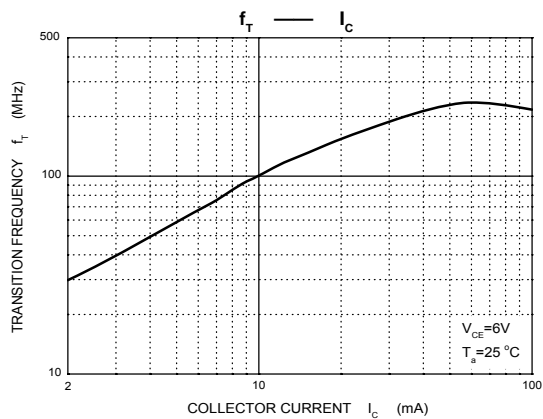
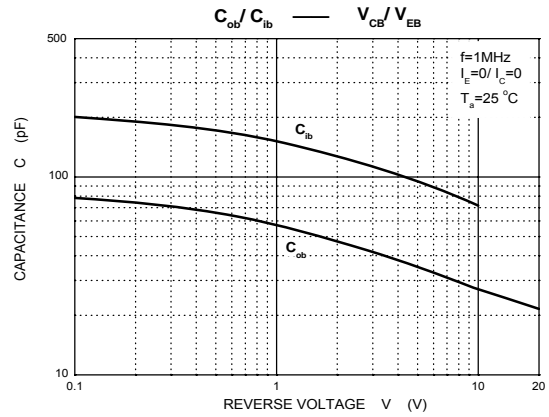
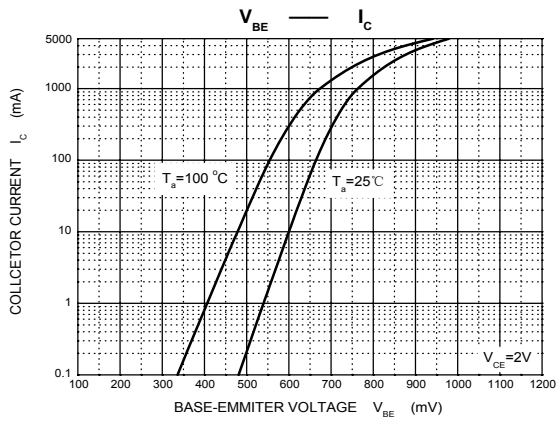
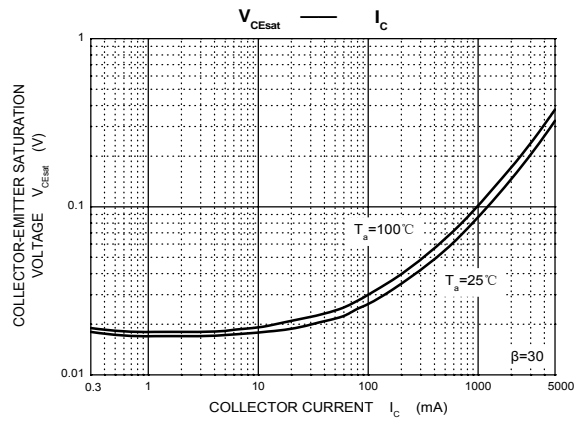
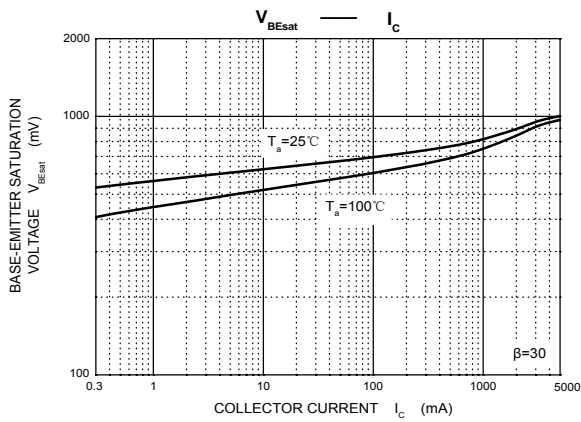
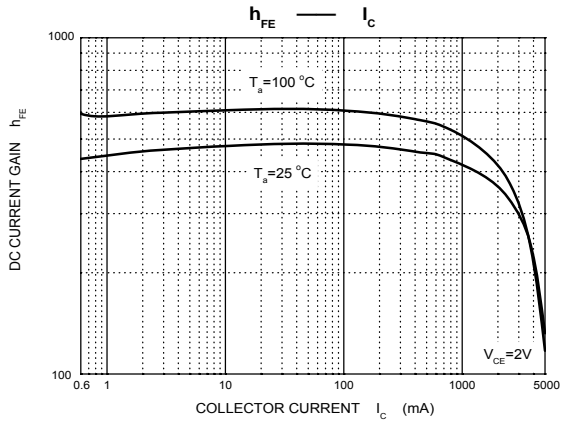
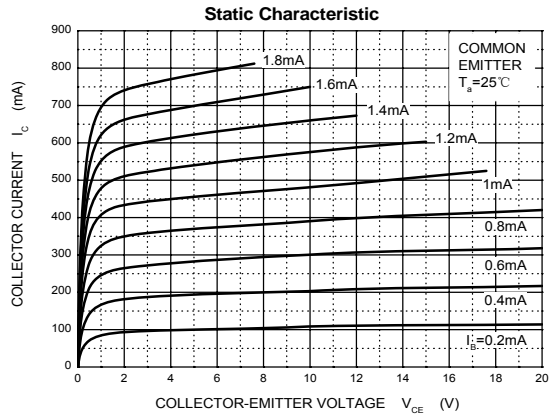
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

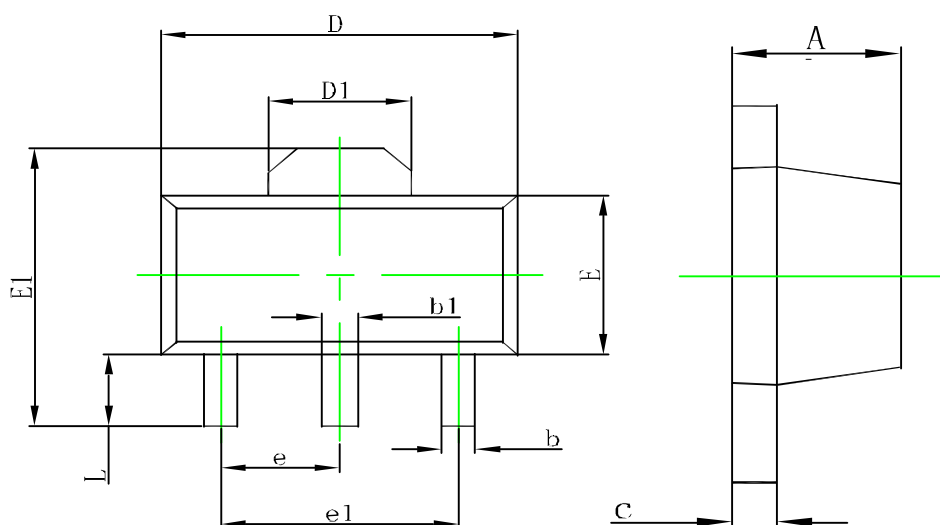
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	V _{CBO}	I _C =10uA, I _E =0	40			V
Collector-Emitter Breakdown Voltage	V _{CEO}	I _C =1mA, I _B =0	20			V
Emitter-Base Breakdown Voltage	V _{EBO}	I _E =10μA, I _C =0	7			V
Collector Cut-off Current	I _{CBO}	V _{CB} =10V, I _E =0			0.1	uA
Emitter Cut-off Current	I _{EBO}	V _{EB} =7V, I _C =0			0.1	uA
DC Current Gain	h _{FE(1)}	V _{CE} =2V, I _C =1mA		200		
	h _{FE(2)}	V _{CE} =2V, I _C =500mA	230		800	
	h _{FE(3)}	V _{CE} =2V, I _C =2A	150			
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =3A, I _B =0.1A			1	V
Output Capacitance	C _{ob}	V _{CB} =20V, I _E =0, f=1MHz			50	pF
Transition Frequency	f _T	V _{CE} =6V, I _C =50mA, f=200MHz		150		MHz

CLASSIFICATION OF h_{FE}

Rank	Q	R	S
Range	230-380	340-600	560-800

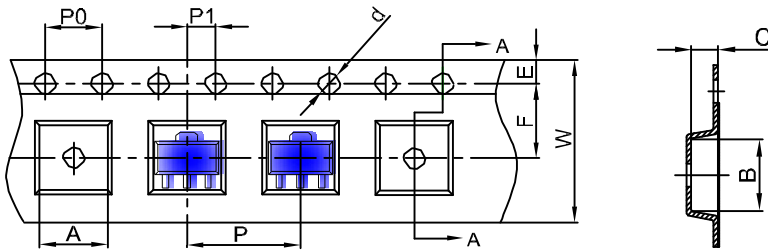
Typical Characteristics



SOT-89 Package Outline Dimensions


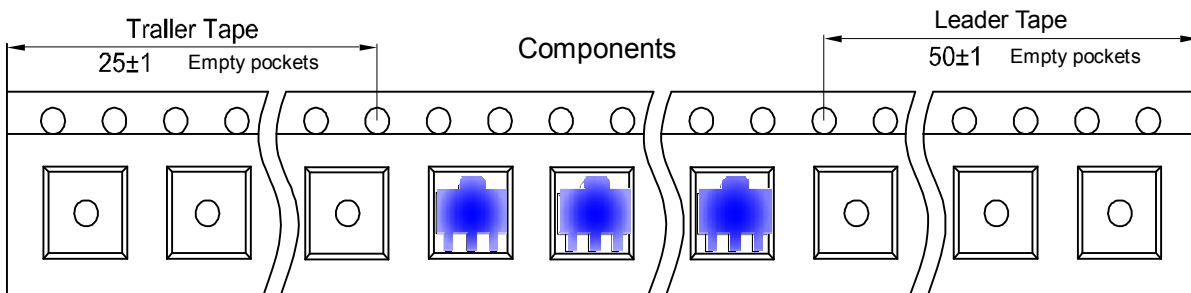
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550REF.		0.061REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP.		0.060TYP.	
e1	3.000TYP.		0.118TYP.	
L	0.900	1.200	0.035	0.047

SOT-89 Tape and Reel

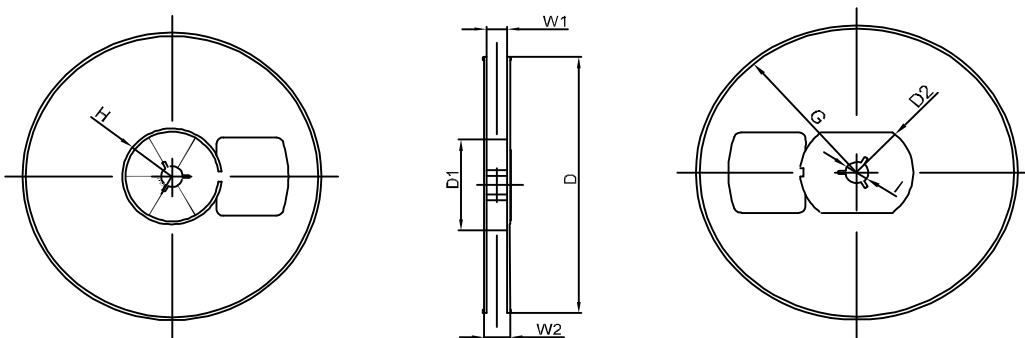


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-89	4.85	4.45	1.85	φ1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-89 Tape Leader and Trailer



SOT-89 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	φ 180	60.00	R32.00	R86.50	R30.00	φ 13.00	13.20	16.50
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1