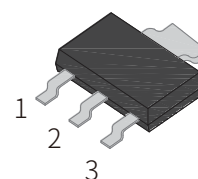


FEATURES

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



SOT-89

MECHANICAL DATA

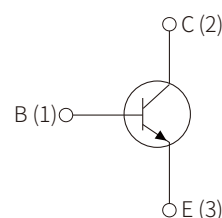
- SOT-89 small outline plastic package
- Epoxy UL: 94V-0
- Mounting position: Any



Marking

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



Schematic Symbol

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	30	
Emitter-Base Voltage	V_{EBO}	7	
Collector Current	I_C	5	A
Collector Power Dissipation	P_C	500	mW
Storage Operation Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS (T_A=25°C)

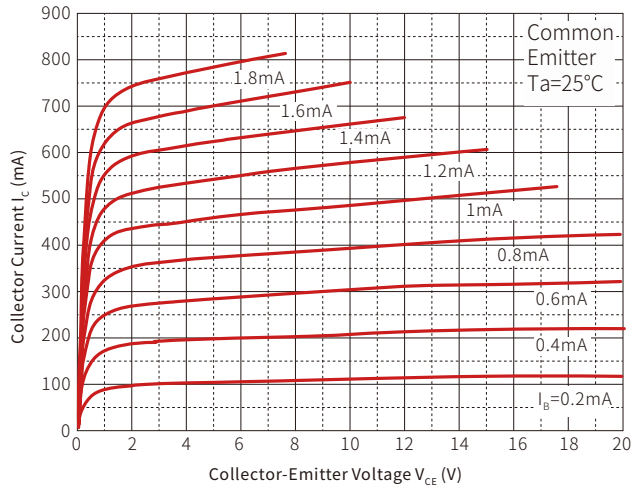
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	V _{(BR)CBO}	I _C =100μA, I _E =0	40			V
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	30			
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	I _E =10μA, I _C =0	7			
Collector cut-off current	I _{CBO}	V _{CB} =10V, I _E =0			0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =7V, I _C =0			0.1	
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
Transition frequency	f _T	V _{CE} =6V, I _C =50mA		150		MHz
Collector output capacitance	C _{ob}	V _{CB} =20V, I _E =0, f=1MHz			50	pF

CLASSIFICATION OF H_{FE(2)}

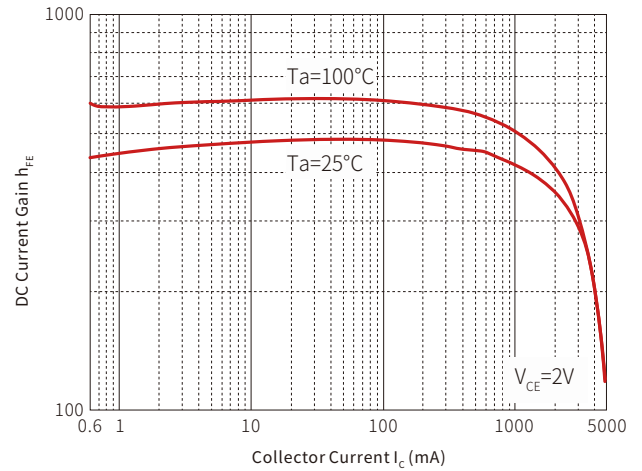
Rank	Q	R	S
Range	230-380	340-600	560-800

TYPICAL CHARACTERISTICS

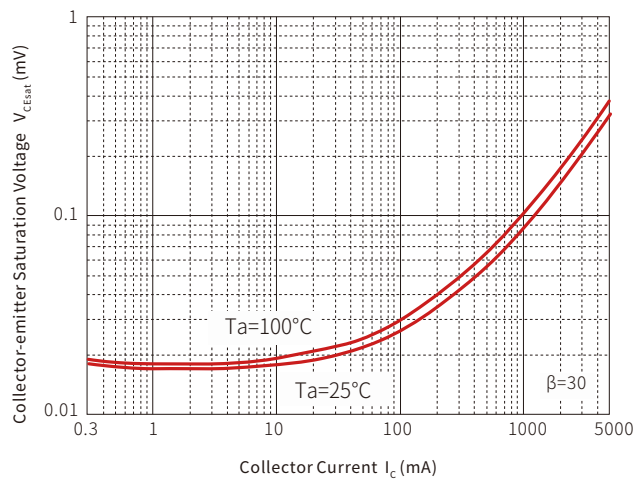
Static Characteristic



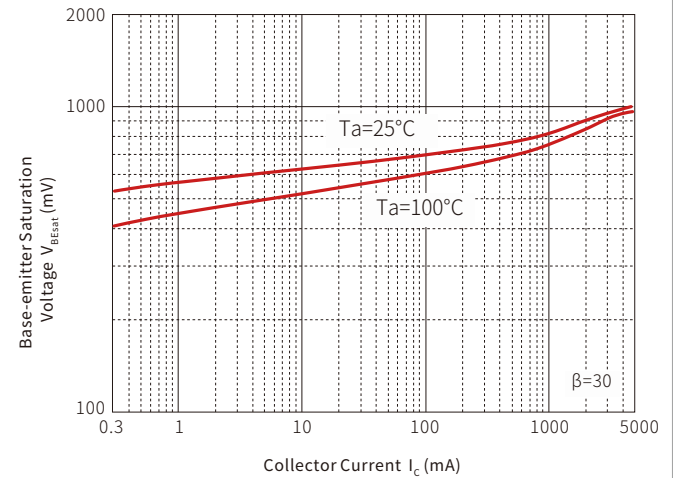
h_{FE} — I_C

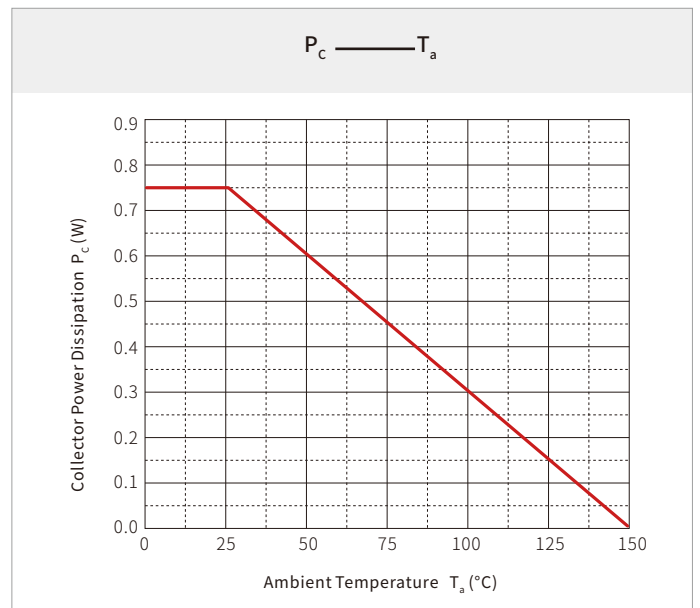
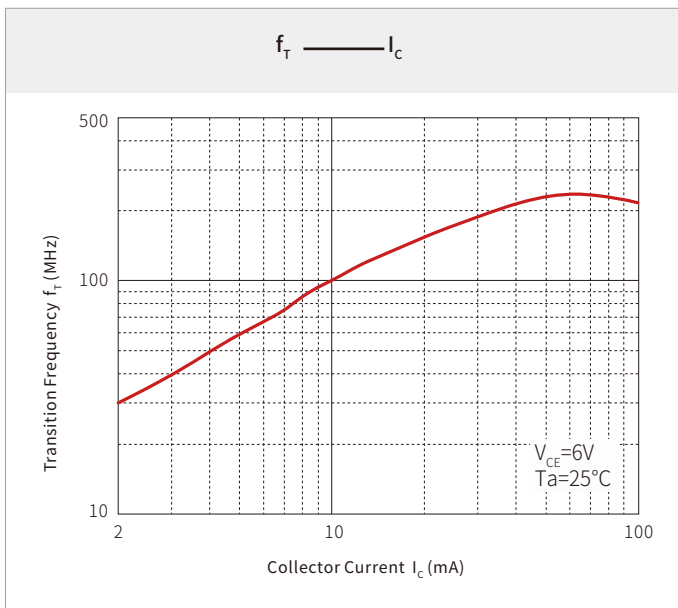
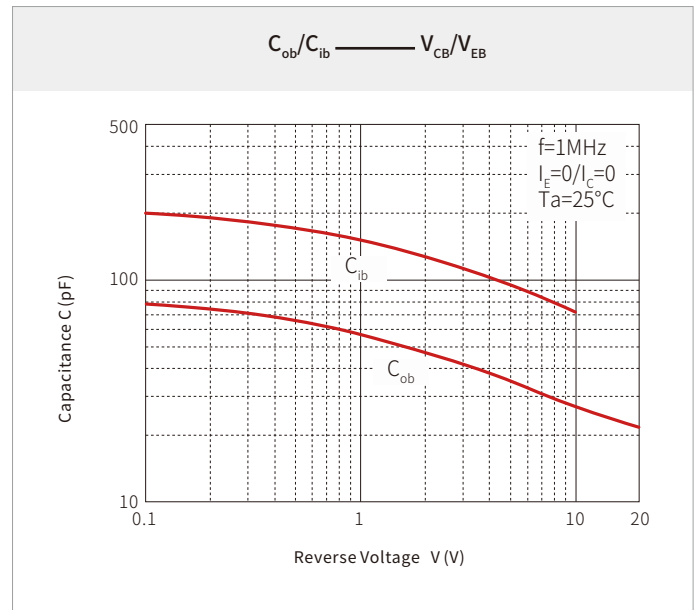
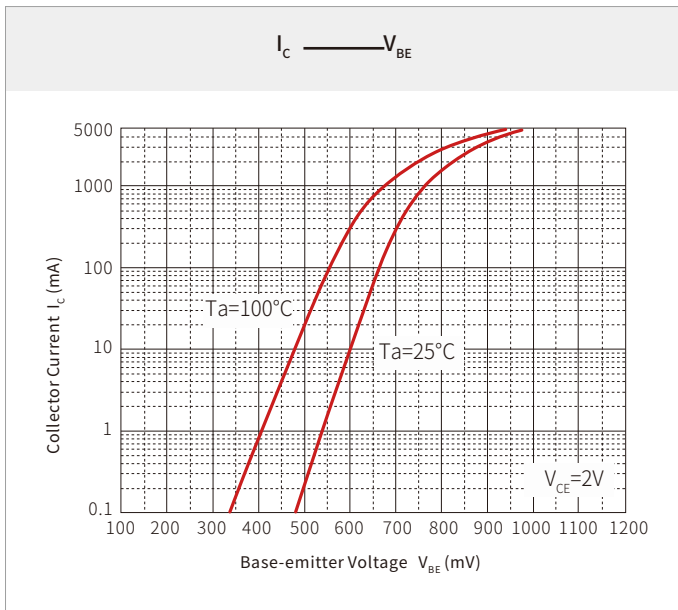


$V_{CE sat}$ — I_C



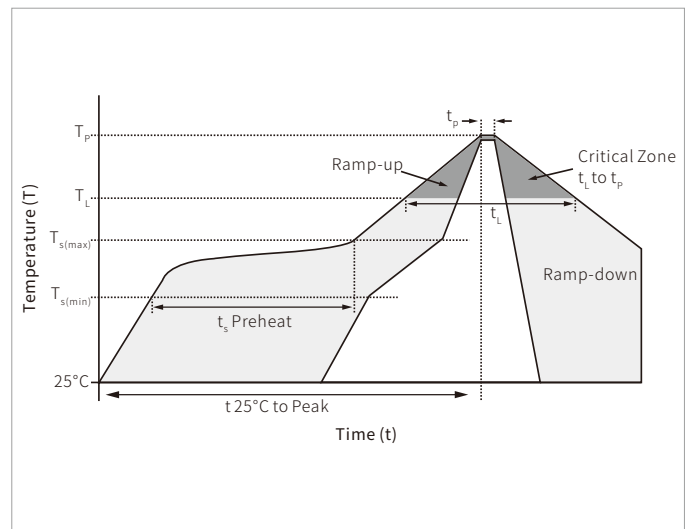
$V_{BE sat}$ — I_C



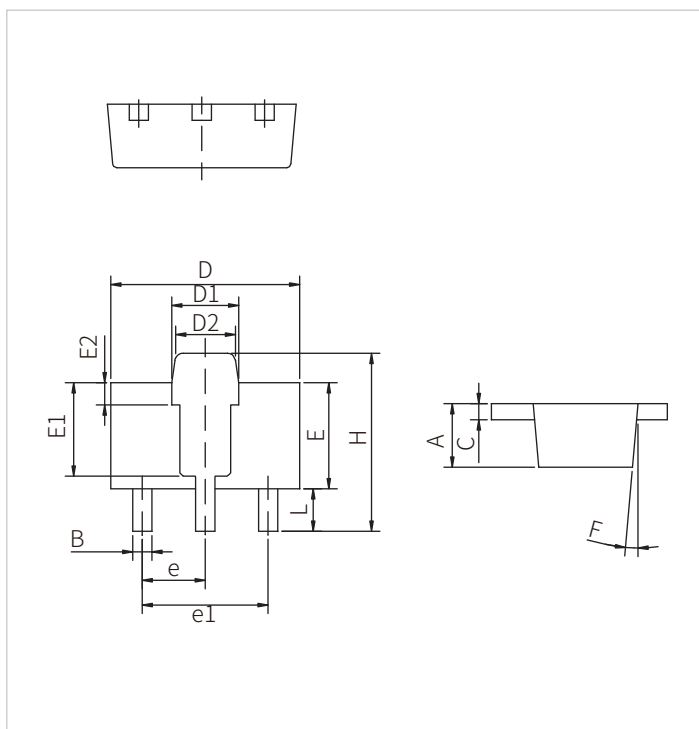


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C



SOT-89 PACKAGE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.60	0.055		0.063
B	0.40		0.52	0.016		0.020
C	0.35		0.41	0.014		0.016
D	4.40		4.60	0.173		0.181
D1	1.50		1.70	0.059		0.067
D2	1.30		1.50	0.051		0.059
E	2.40		2.60	0.094		0.102
E1		2.20			0.087	
E2		0.52			0.020	
e		1.50			0.059	
e1		3.00			0.118	
F		5.00			5.000	
H	4.05		4.25	0.159		0.167
L	0.89		1.20	0.035		0.047

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size	Box	Carton
2SD965A	SOT-89	1000PCS	7"	6000PCS	30000PCS

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By QR Code

Website



Wechat

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