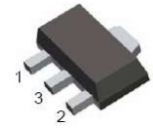


2SD1898-HF Series (NPN)

RoHS Device

Halogen Free



Features

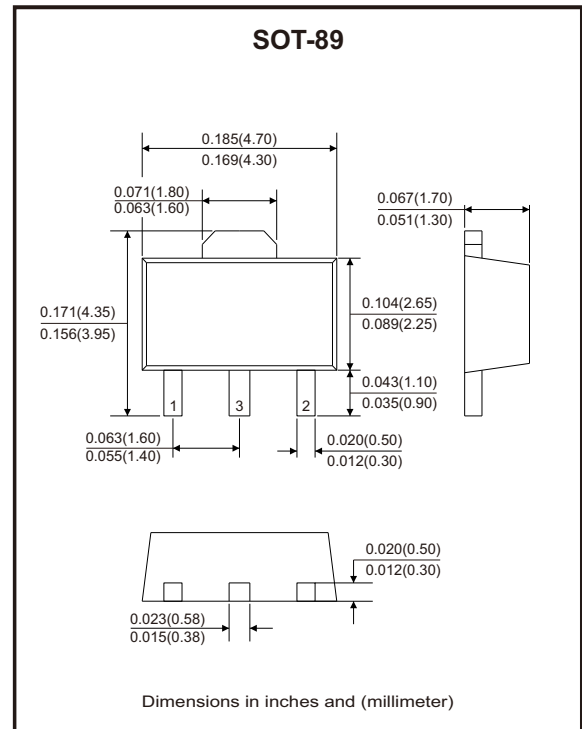
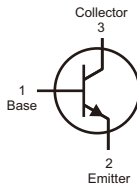
- High V_{CE0} , $V_{CE0}=80$.
- High I_C , $I_C=1A(DC)$.
- Good HFE linearity.
- Low $V_{CE(sat)}$.

Mechanical data

- Case: SOT-89, molded plastic.
- Mounting position: Any.

Circuit Diagram

- 1. Base
- 2. Emitter
- 3. Collector



Maximum Ratings (at $T_A=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	120	V
Collector-emitter voltage	V_{CEO}	80	V
Emitter-base voltage	V_{EBO}	5	V
Collector current-continuous	I_C	1	A
Collector current-pulse	I_C	2	A
Collector dissipation (Note 1)	P_C	0.5 1.3	W
Junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^{\circ}C$

Notes: 1. Mounted on ceramic substrate (250mm² x 0.8t).

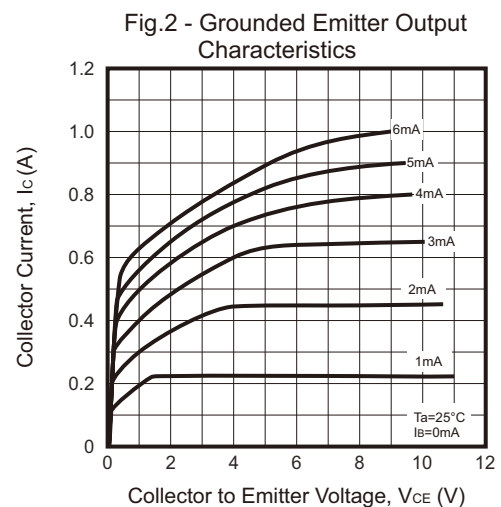
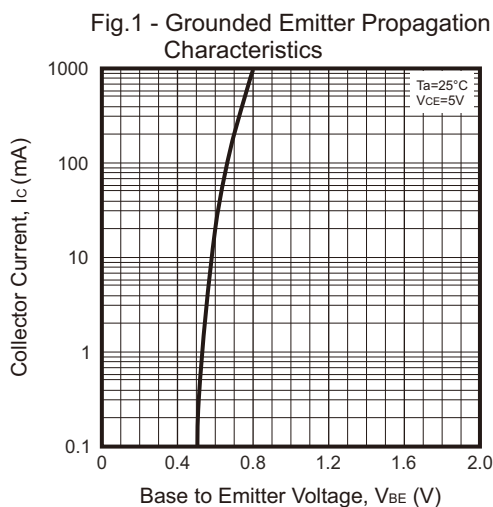
Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 50\mu A, I_E = 0$	120			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1mA, I_B = 0$	80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 50\mu A, I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 100V, I_E = 0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4V, I_C = 0$			1	μA
DC current gain	h_{FE}	$V_{CE} = 3V, I_C = 0.5A$	82		390	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 20mA$		0.15	0.4	V
Transition frequency	f_T	$V_{CE} = 10V, I_C = -50mA, f = 100MHz$		100		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$		20		pF

Classification of $h_{FE}(1)$

Rank	2SD1898P-HF	2SD1898Q-HF	2SD1898R-HF
Range	82-180	120-270	180-390

Rating and Characteristic Curves (2SD1898-HF Series)



Rating and Characteristic Curves (2SD1898-HF Series)

Fig.3 - DC Current Gain vs. Collector Current

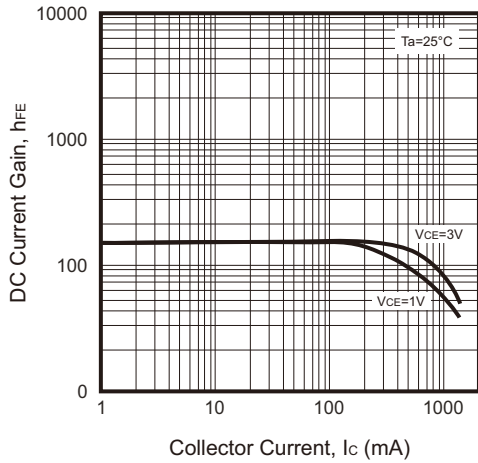


Fig.4 - Collector-Emitter Saturation Voltage vs. Collector Current

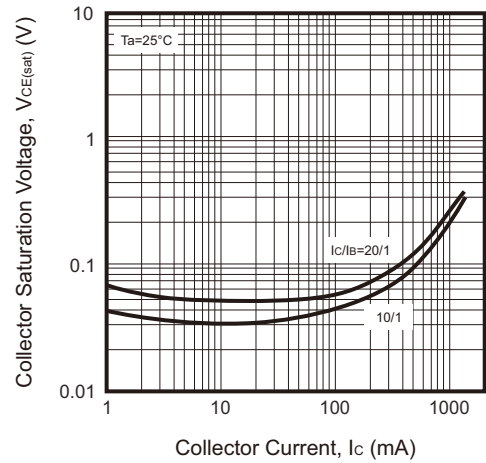


Fig.5 - Gain Bandwidth Product vs. Emitter Current

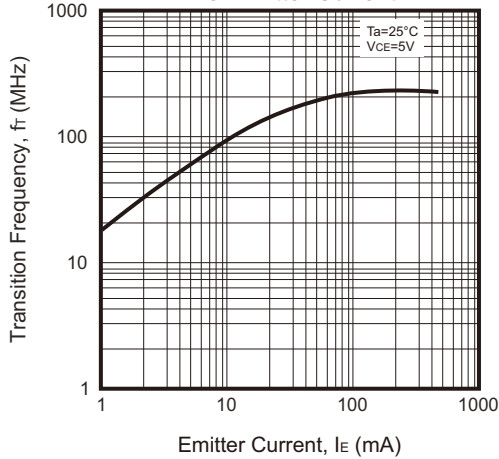


Fig.6 - Collector Output Capacitance vs. Collector-Base Voltage
Emitter Input Capacitance vs. Emitter-Base Voltage

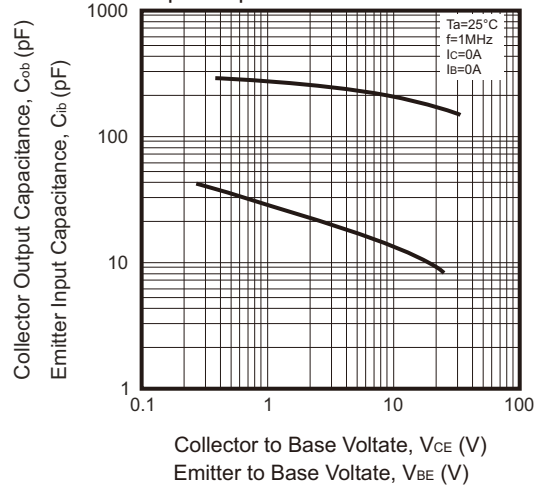
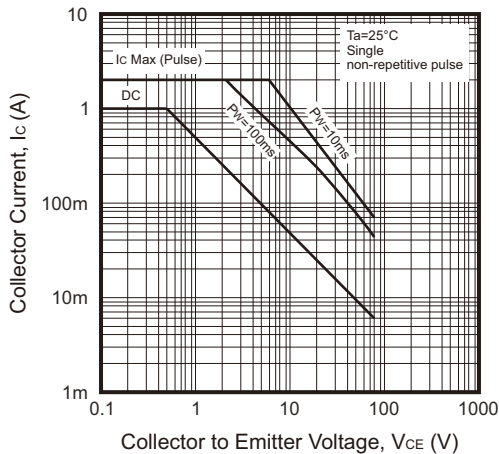
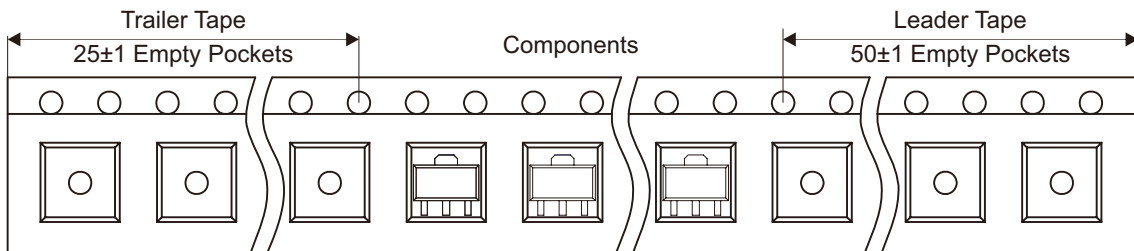
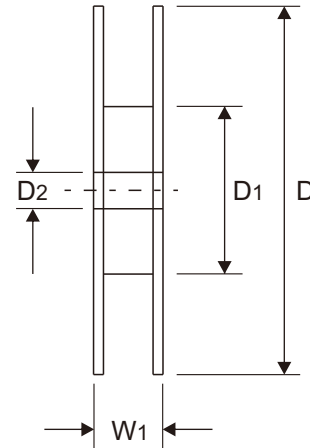
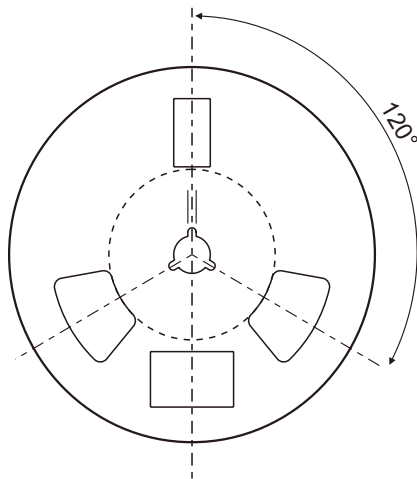
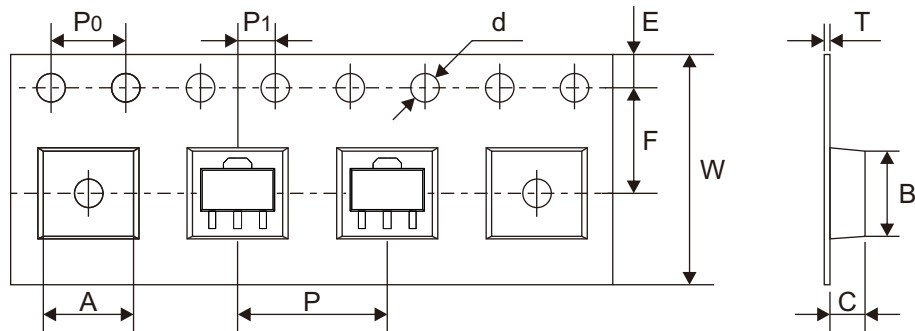


Fig.7 - Safe Operating Area



Reel Taping Specification

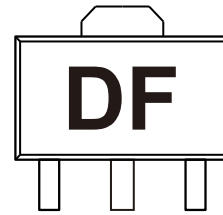


SOT-89	SYMBOL	A	B	C	d	D	D ₁	D ₂
	(mm)	4.85 ± 0.10	4.45 ± 0.10	1.85 ± 0.10	1.50 ± 0.10	180.00 ± 1.00	60.00 ± 1.50	13.00 ± 0.50
	(inch)	0.191 ± 0.004	0.175 ± 0.004	0.073 ± 0.004	0.059 ± 0.004	7.087 ± 0.039	2.362 ± 0.059	0.512 ± 0.020

SOT-89	SYMBOL	E	F	P	P ₀	P ₁	T	W	W ₁
	(mm)	1.75 ± 0.10	5.50 ± 0.05	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.292 ± 0.013	12.00 + 0.30 - 0.10	16.40 ± 0.30
	(inch)	0.069 ± 0.004	0.217 ± 0.002	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.011 ± 0.001	0.472 + 0.012 - 0.004	0.646 ± 0.012

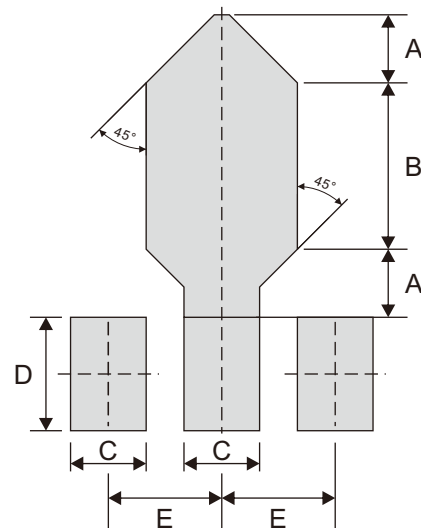
Marking Code

Part Number	Marking Code
2SD1898P-HF	DF
2SD1898Q-HF	
2SD1898R-HF	



Suggested P.C.B. PAD Layout

SIZE	SOT-89	
	(mm)	(inch)
A	0.90	0.035
B	2.20	0.087
C	1.00	0.039
D	1.50	0.059
E	1.50	0.059



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-89	1,000	7