



CHENMKO ENTERPRISE CO.,LTD

2SD2098PT

Lead free devices

**SMALL FLAT
NPN Epitaxial Transistor**

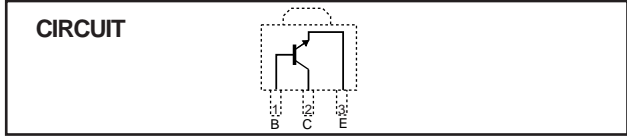
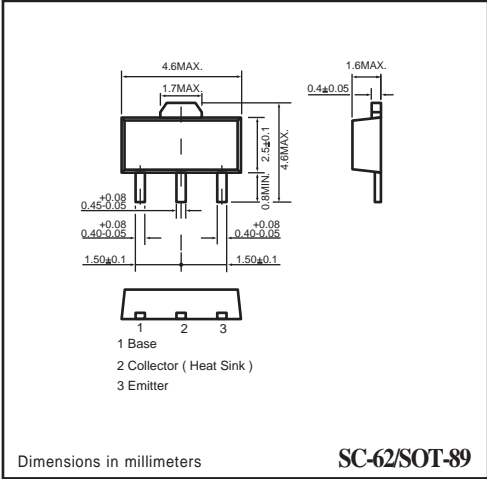
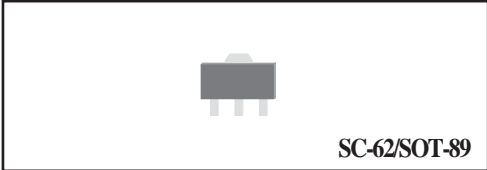
VOLTAGE 20 Volts CURRENT 5 Amperes

APPLICATION
* Power driver and Strobe Flash .

FEATURE
* Small flat package. (SC-62/SOT-89)
* Low saturation voltage $V_{CE(sat)}=0.25V(Typ.)(I_C/I_B=4A/0.1A)$
* High speed switching time: $t_{stg}=1.0\mu Sec (typ.)$
* $PC=2.0W$ (mounted on ceramic substrate).
* High saturation current capability.

CONSTRUCTION
* NPN Silicon Transistor

MARKING
* hFE Classification Q: Q98
R: R98



MAXIMUM RATINGS (At $T_A = 25^\circ C$ unless otherwise noted)

RATINGS	CONDITION	SYMBOL	MIN.	MAX.	UNITS
Collector - Base Voltage	Open Emitter	V_{CB0}	-	50	Volts
Collector - Emitter Voltage	Open Base	V_{CE0}	-	20	Volts
Emitter - Base Voltage	Open Collector	V_{EB0}	-	6	Volts
Collector Current DC		I_C	-	5	Amps
Peak Collector Current		I_{CM}	-	10	Amps
Peak Base Current		I_{BM}	-	0.5	Amps
Total Power Dissipation	$T_A \leq 25^\circ C$; Note 1	P_{TOT}	-	2.0	W
Storage Temperature		T_{STG}	-55	+150	$^\circ C$
Junction Temperature		T_J	-	+150	$^\circ C$
Operating Ambient Temperature		T_{AMB}	-55	+150	$^\circ C$

Note

1. Transistor mounted on ceramic substrate by 40mmX40mmX0.7mm.
2. Measured at Pulse Width 300 us, Duty Cycle 2%.

RATING CHARACTERISTIC CURVES (2SD2098PT)

CHARACTERISTICS (At $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Collector Cut-off Current	$I_E=0; V_{CB}=40\text{V}$	I_{CBO}	-	-	0.5	μA
Emitter Cut-off Current	$I_C=0; V_{EB}=5\text{V}$	I_{CEO}	-	-	0.5	μA
DC Current Gain	$V_{CE}=2\text{V}$; Note 1 $I_C=0.5\text{A}$	h_{FE}	120	-	390	
Collector-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=0.1\text{A}$	V_{CEsat}	-	0.25	1.0	Volts
Base-Emitter Saturation Voltage	$I_C=4\text{A}; I_B=0.1\text{A}$	V_{BEsat}	-	1.0	2.0	Volts
Collector Capacitance	$I_E=I_C=0; V_{CB}=20\text{V}$; $f=1\text{MHz}$	C_C	-	30	-	pF
Transition Frequency	$I_C=0.05\text{A}; V_{CE}=6.0\text{V}$; $f=100\text{MHz}$	f_T	-	150	-	MHz

Note :

1. Pulse test: $t_p \leq 300\mu\text{Sec}$; $\delta \leq 0.02$.
2. $h_{FE}(2)$ Classification Q: 120 to 270, R: 180 to 390.

RATING CHARACTERISTIC CURVES (2SD2098PT)

Fig.1 Grounded emitter propagation characteristics

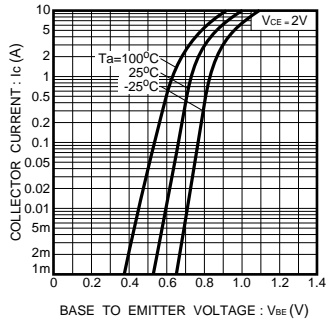


Fig.2 Grounded emitter output characteristics

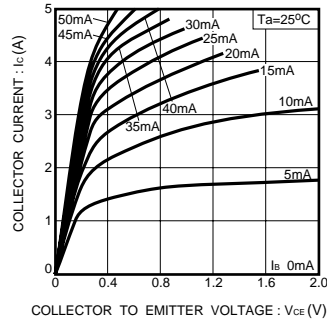


Fig.3 DC current gain vs. collector current (I)

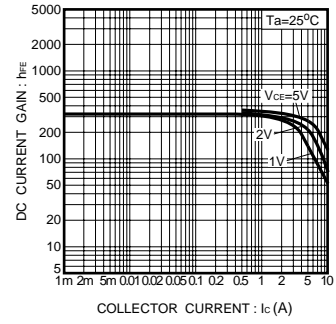


Fig.4 DC current gain vs. collector current (II)

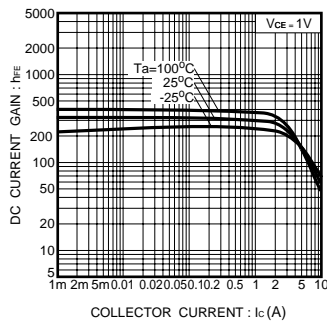


Fig.5 DC current gain vs. collector current (III)

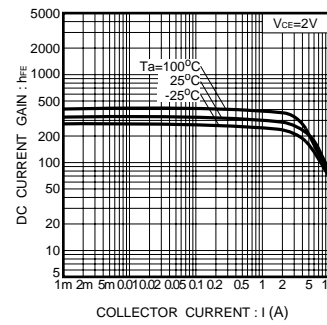


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

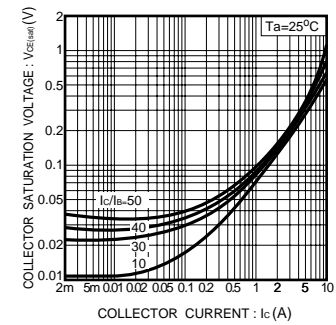


Fig.7 Collector-emitter saturation voltage vs. collector current (II)

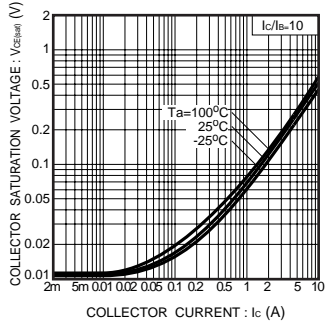


Fig.8 Collector-emitter saturation voltage vs. collector current (III)

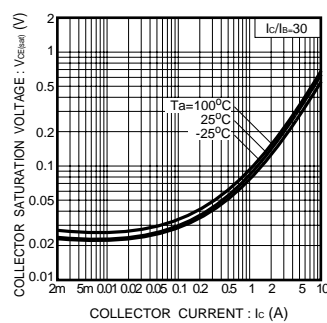
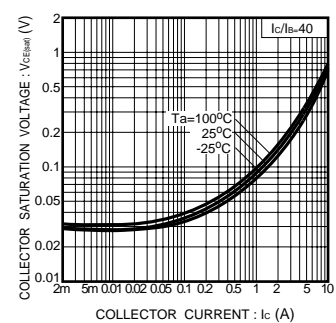


Fig.9 Collector-emitter saturation voltage vs. collector current (IV)



RATING CHARACTERISTIC CURVES (2SD2098PT)

Fig.10 Collector-emitter saturation voltage vs. collector current (V)

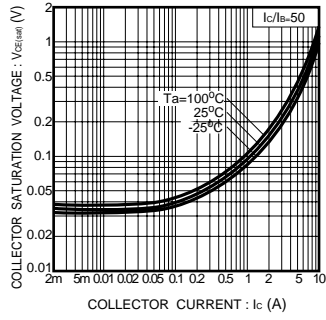


Fig.11 Gain bandwidth product vs. emitter current

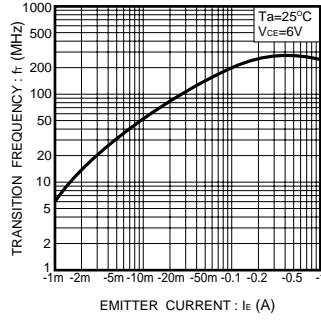


Fig.12 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

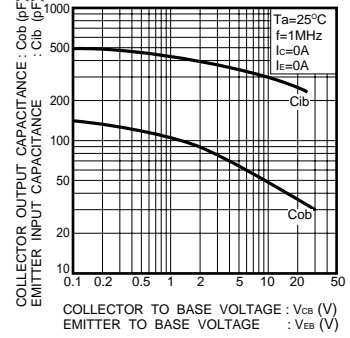


Fig.13 Safe operating area

