



# CHENMKO ENTERPRISE CO.,LTD

## SMALL FLAT NPN Epitaxial Transistor

VOLTAGE 30 Volts CURRENT 3 Ampere

**2SD882PT**

Lead free devices

### APPLICATION

\* Power driver and Dc to DC convertor .

### FEATURE

- \* Small flat package. (SC-62/SOT-89)
- \* Low saturation voltage  $V_{CE(sat)}=0.5V(max.)(I_c=2A)$
- \* High speed switching time:  $t_{stg}= 1.0\mu Sec (typ.)$
- \*  $PC= 1.5 W$  (mounted on ceramic substrate).
- \* High saturation current capability.

### CONSTRUCTION

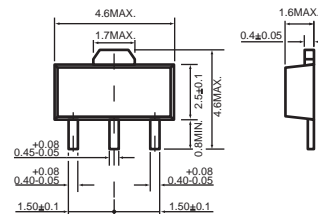
\* NPN Switching Transistor

### MARKING

\* hFE Classification Q: Q82  
P: P82  
E: 882



SC-62/SOT-89

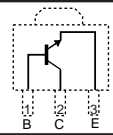


1 Base  
2 Collector ( Heat Sink )  
3 Emitter

Dimensions in millimeters

SC-62/SOT-89

### CIRCUIT



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

RATINGS	CONDITION	SYMBOL	MIN.	MAX.	UNITS
Collector - Base Voltage	Open Emitter	$V_{CB0}$	-	40	Volts
Collector - Emitter Voltage	Open Base	$V_{CE0}$	-	30	Volts
Emitter - Base Voltage	Open Collector	$V_{EB0}$	-	5	Volts
Collector Current DC		$I_c$	-	3	Amps
Peak Collector Current		$I_{CM}$	-	3	Amps
Peak Base Current		$I_{BM}$	-	0.5	Amps
Total Power Dissipation	$T_A \leq 25^{\circ}C$ ; Note 1	$P_{TOT}$	-	1500	mW
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

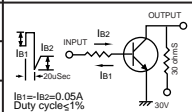
1. Transistor mounted on ceramic substrate 50mmX50mmX0.8t.
2. Measured at Pulse Width 300 us, Duty Cycle 2%.

## RATING CHARACTERISTIC CURVES ( 2SD882PT )

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

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Collector Cut-off Current	$I_E=0; V_{CB}=30\text{V}$	$I_{CBO}$	-	-	1.0	$\mu\text{A}$
Emitter Cut-off Current	$I_C=0; V_{EB}=3\text{V}$	$I_{EBO}$	-	-	1.0	$\mu\text{A}$
DC Current Gain	$V_{CE}=2\text{V}$ ; Note 1 $I_C=0.02\text{A}$ $I_C=1.0\text{A}$ ; Note 2	$h_{FE}$	30 100	- 160	- 500	
Collector-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=0.2\text{A}$	$V_{CEsat}$	-	0.3	0.5	Volts
Base-Emitter Saturation Voltage	$I_C=2\text{A}; I_B=-0.2\text{A}$	$V_{BEsat}$	-	1.0	2.0	Volts
Collector Capacitance	$I_E=I_C=0; V_{CB}=10\text{V}; f=1\text{MHz}$	$C_C$	-	55	-	$\text{pF}$
Transition Frequency	$I_C=0.02\text{A}; V_{CE}=20\text{V}; f=100\text{MHz}$	$f_T$	-	100	-	$\text{MHz}$

**SWITCHING TIMES** ( Between 10% and 90% levels )

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Turn-on Time	 <p><math>I_{B1} = -I_{B2} = 0.05\text{A}</math> Duty cycle <math>\leq 1\%</math></p>	$t_{on}$	-	0.1	-	$\mu\text{Sec}$
Storage Time		$t_s$	-	1.0	-	$\mu\text{Sec}$
Fall Time		$t_f$	-	0.1	-	$\mu\text{Sec}$

**Note :**

1. Pulse test:  $t_p \leq 300\mu\text{Sec}$ ;  $\delta \leq 0.02$ .
2.  $h_{FE}(2)$  Classification Q: 100 to 200, P: 160 to 320, E: 250 to 500.

## RATING CHARACTERISTIC CURVES ( 2SD882PT )

### Typical Electrical Characteristics

Figure 1.  $C_c$  - Reverse  $V_{cb}$

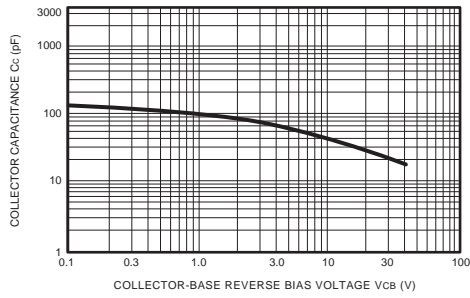


Figure 2. Cutoff Frequency -  $I_c$

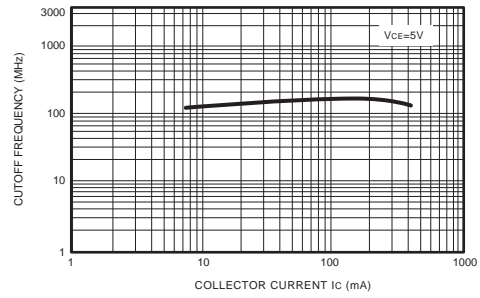


Figure 3.  $h_{FE}$  -  $I_c$

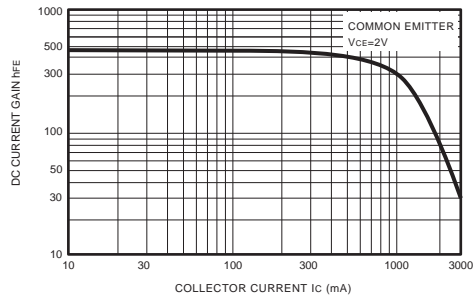


Figure 4.  $P_c$  -  $T_a$

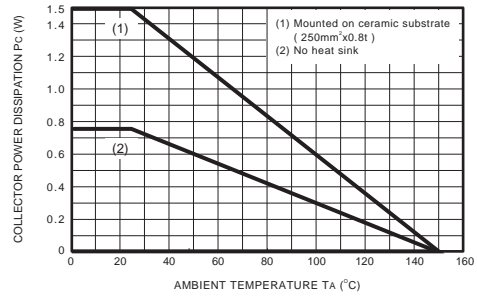


Figure 5.  $V_{CE(sat)}$  -  $I_c$

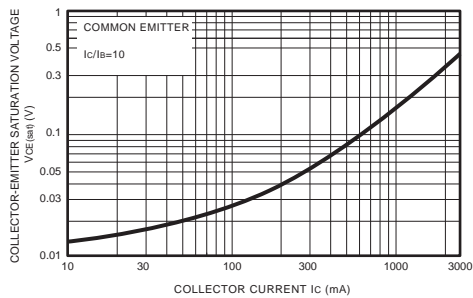
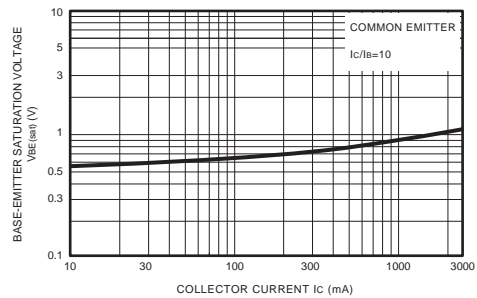


Figure 6.  $V_{BE(sat)}$  -  $I_c$



## RATING CHARACTERISTIC CURVES ( 2SD882PT )

### Typical Electrical Characteristics

Figure 9. Safe Operation Area

