



# CHENMKO ENTERPRISE CO.,LTD

**CHP69PT**

*Lead free devices*

## SMALL FLAT PNP Medium Power Transistor

VOLTAGE 20 Volts CURRENT 1 Ampere

**APPLICATION**

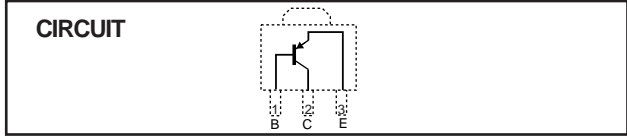
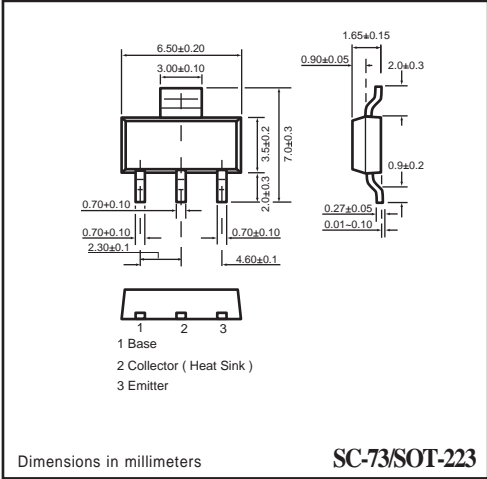
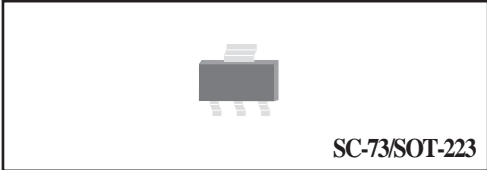
- \* General purpose switching and amplification
- \* Audio power amplifier

**FEATURE**

- \* Small flat package. ( SC-73/SOT-223 )
- \* Low saturation voltage  $V_{CE(sat)} = -0.5V(\text{max.})(I_C = -1A)$
- \* High speed switching time:  $t_{stg} = 1.0\mu\text{Sec}(\text{typ.})$
- \*  $P_C = 1.35W$  (mounted on printed-circuit board).
- \* High saturation current capability.

**CONSTRUCTION**

- \* PNP Switching Transistor



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

RATINGS	CONDITION	SYMBOL	MIN.	MAX.	UNITS
Collector - Base Voltage	Open Emitter	$V_{CB0}$	-	-32	Volts
Collector - Emitter Voltage	Open Base	$V_{CE0}$	-	-20	Volts
Emitter - Base Voltage	Open Collector	$V_{EB0}$	-	-5	Volts
Collector Current DC		$I_C$	-	-1	Amps
Peak Collector Current		$I_{CM}$	-	-2	Amps
Peak Base Current		$I_{BM}$	-	-0.2	Amps
Total Power Dissipation	$T_A \leq 25^\circ\text{C}$ ; Note 1	$P_{TOT}$	-	1.35	W
Storage Temperature		$T_{STG}$	-65	+150	$^\circ\text{C}$
Junction Temperature		$T_J$	-	+150	$^\circ\text{C}$
Operating Ambient Temperature		$T_{AMB}$	-65	+150	$^\circ\text{C}$

**Note**

1. Transistor mounted on printed-circuit board, Mounting pad for collector 10 mm<sup>2</sup>.
2. Measured at Pulse Width 300 us, Duty Cycle 2%.

## RATING CHARACTERISTIC CURVES ( CHP69PT )

### THEMAL CHARACTERISTICS

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Thermal Resistance 1	Note 1	R $\theta$ J-A	-	90	-	°C/W
Thermal Resistance 2	Note 1	R $\theta$ J-S	-	10	-	°C/W

**Note :**

1. Transistor mounted on printed-circuit board, Mounting pad for collector 10 mm<sup>2</sup>.

### CHARACTERISTICS ( At TA = 25°C unless otherwise noted )

PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Collector Cut-off Current	I <sub>E</sub> =0; V <sub>CB</sub> =-25V	I <sub>CBO</sub>	-	-	-100	nA
	I <sub>E</sub> =0; V <sub>CB</sub> =-25V; T <sub>J</sub> =150°C		-	-	-10	uA
Emitter Cut-off Current	I <sub>C</sub> =0; V <sub>EB</sub> =-5V	I <sub>CEO</sub>	-	-	-100	nA
DC Current Gain	I <sub>C</sub> =-5mA; V <sub>CE</sub> =-10V I <sub>C</sub> =-500mA; V <sub>CE</sub> =-1.0V I <sub>C</sub> =-1.0A; V <sub>CE</sub> =-1.0V	h <sub>FE</sub>	50	-	-	
			85	-	375	
			60	-	-	
DC Current Gain CHP69-16 CHP69-25	I <sub>C</sub> =-500mA; V <sub>CE</sub> =-1.0V	h <sub>FE</sub>	100	-	250	
			160	-	375	
DC Current Gain CHP69-16/IN	I <sub>C</sub> =-10mA; V <sub>CE</sub> =-1.8V	h <sub>FE</sub>	140	-	230	
Collector-Emitter Saturation Voltage	I <sub>C</sub> =-1.0A; I <sub>B</sub> =-100mA	V <sub>CEsat</sub>	-	-	-500	mVolts
Base-Emitter Saturatio Voltage	I <sub>C</sub> =-5mA; V <sub>CE</sub> =-10V I <sub>C</sub> =-1.0A; V <sub>CE</sub> =-1.0V	V <sub>BEsat</sub>	-	-620	-	mVolts
			-	-	-1.0	Volts
Collector Capacitance	I <sub>E</sub> =I <sub>E</sub> =0; V <sub>CB</sub> =-5.0V; f=1MHz	C <sub>C</sub>	-	48	-	pF
Transition Frequency	I <sub>C</sub> =-10mA; V <sub>CE</sub> =-5V; f=100MHz	f <sub>T</sub>	40	-	-	MHz
DC Current Gain Ratio of The Complementary pairs	I <sub>I</sub> C1=0.5A; I <sub>V</sub> CE1=1.0V	h <sub>FE1</sub> / h <sub>FE2</sub>	-	-	1.6	

**Note :**

1. Pulse test: t<sub>p</sub> ≤ 300uSec; δ ≤ 0.02.

## RATING CHARACTERISTIC CURVES ( CHP69PT )

### Typical Electrical Characteristics

Figure 1. Typical DC Current Gain

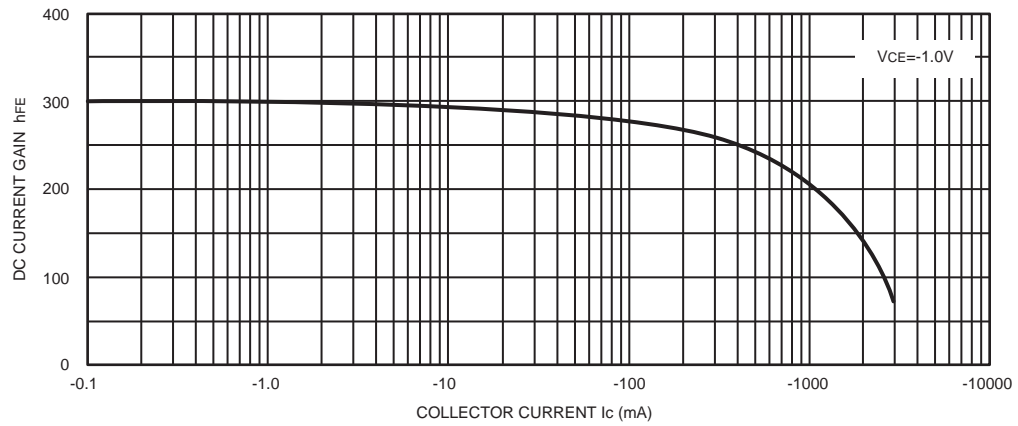


Figure 2. Typical DC Current Gain

