



**CHENMKO ENTERPRISE CO.,LTD**

**SURFACE MOUNT**

**Medium Power PNP Transistor**

**VOLTAGE 32 Volts CURRENT 0.5 Ampere**

**2SA1577PT**

*Lead free devices*

**APPLICATION**

\* Medium Power Amplifier .

**FEATURE**

- \* Surface mount package. (SC-70/SOT-323)
- \* Low saturation voltage V
- \* Low cob. Cob=7.0pF(Typ) $E_{(sat)}=-0.4V(max.)$ ( $I_c=-100mA$ )
- \*  $P_C= 200mW$  (mounted on ceramic substrate).
- \* High saturation current capability.

**CONSTRUCTION**

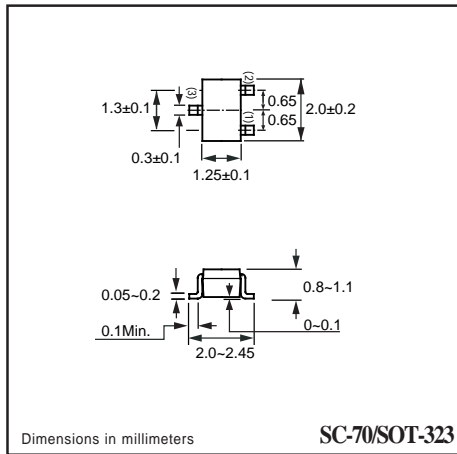
- \* PNP Silicon Transistor
- \* Epitaxial planar type

**MARKING**

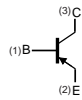
- \* HFE(P):UE
- \* HFE(Q):PC
- \* HFE(R):RB



SC-70/SOT-323



**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	$V_{CE0}$	--	-32	Volts
Emitter - Base Voltage	Open Collector	$V_{EB0}$	-	-5	Volts
Collector Current DC		$I_c$	-	-500	mAmps
Peak Collector Current		$I_{CM}$	-	-500	mAmps
Peak Base Current		$I_{BM}$	-	-10	mAmps
Total Power Dissipation	$T_A \leq 25^{\circ}C$ ; Note 1	$P_{TOT}$	-	200	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%.

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## RATING CHARACTERISTICS ( 2SA1577PT )

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

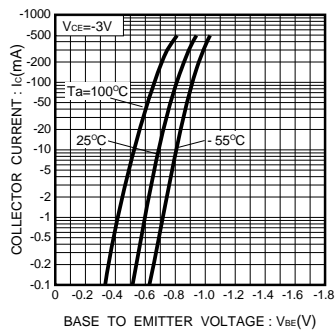
PARAMETERS	CONDITION	SYMBOL	MIN.	TYPE	MAX.	UNITS
Collector Cut-off Current	$I_E=0; V_{CB}=-20\text{V}$	$I_{CBO}$	-	-	-1.0	$\mu\text{A}$
Emitter Cut-off Current	$I_C=0; V_{EB}=-4\text{V}$	$I_{CEO}$	-	-	-1.0	$\mu\text{A}$
DC Current Gain	$V_{CE}=-3\text{V}$ ; Note 1 $I_C=-10\text{mA}$ ; Note 2	$h_{FE}$	82	-	390	
Collector-Emitter Saturation Voltage	$I_C=-100\text{mA}; I_E=-10\text{mA}$	$V_{CEsat}$	-	-	-0.4	Volts
Base-Emitter Saturatio Voltage	$I_C=-100\text{mA}; I_E=-10\text{mA}$	$V_{BEsat}$	-	-	-1.1	mVolts
Output Collector Capacitance	$I_E=I_C=0; V_{CB}=-10\text{V}; f=1\text{MHz}$	$C_{ob}$	-	7	-	pF
Transition Frequency	$I_C=2\text{mA}; V_{CE}=-10\text{V}; f=100\text{MHz}$	$f_T$	-	200	-	MHz

**Note :**

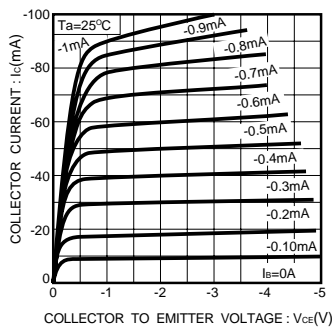
1. Pulse test:  $t_p \leq 300\mu\text{Sec}$ ;  $\delta \leq 0.02$ .
2.  $h_{FE}$ : Classification P: 82 to 180, Q: 120 to 270, R: 180 to 390

## RATING CHARACTERISTIC CURVES ( 2SA1577PT )

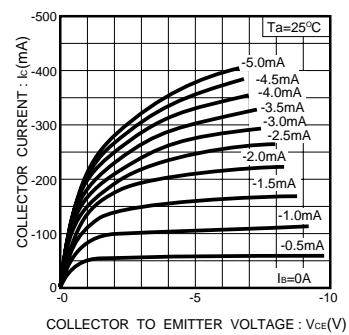
**Fig.1** Grounded emitter propagation characteristics



**Fig.2** Grounded emitter output characteristics (1)



**Fig.3** Grounded emitter output characteristics (2)



## RATING CHARACTERISTIC CURVES ( 2SA1577PT )

Fig.4 Collector-emitter saturation voltage vs. collector current

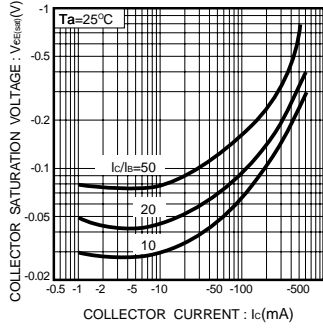


Fig.5 Collector-emitter saturation voltage vs. collector current

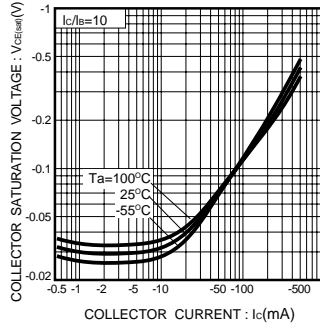


Fig.6 DC current gain vs. collector current

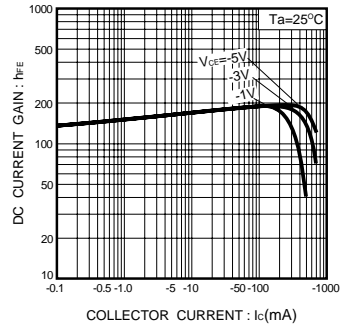


Fig.7 DC current gain vs. collector current

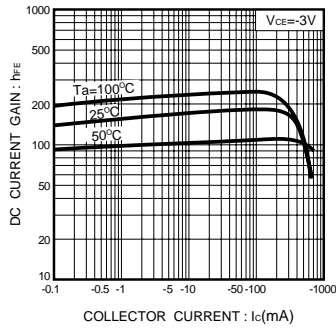


Fig.8 Gain bandwidth product vs. emitter current

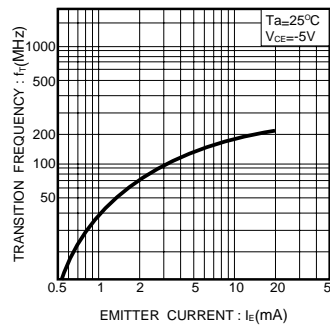


Fig.9 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

