



CHENMKO ENTERPRISE CO.,LTD

**SURFACE MOUNT
NPN Switching Transistor**

VOLTAGE 32 Volts CURRENT 1 Ampere

2SD1664GP-A

Halogens free devices

APPLICATION

- * Telephone and professional communication equipment.
- * Other switching applications.

FEATURE

- * Suitable for high packing density.
- * Low voltage (Max.=32V) .
- * High saturation current capability.
- * Voltage controlled small signal switch.

CONSTRUCTION

- * NPN Switching Transistor

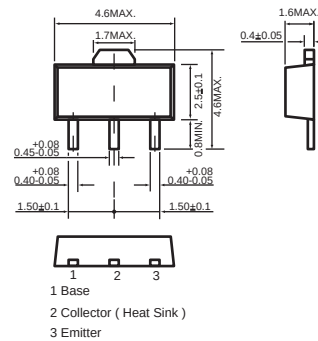
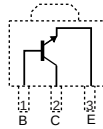
MARKING

- * HFE(R):DAP
- * HFE(P):P64
- * HFE(Q):Q64



SC-62/SOT-89

CIRCUIT



Dimensions in millimeters

SC-62/SOT-89

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CB0}	collector-base voltage	open emitter	—	40	V
V_{CE0}	collector-emitter voltage	open base	—	32	V
V_{EB0}	emitter-base voltage	open collector	—	5	V
I_C	collector current DC		—	1	A
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$; note 1	—	2000	mW
T_{stg}	storage temperature		-55	+150	$^{\circ}\text{C}$
T_j	junction temperature		—	150	$^{\circ}\text{C}$

Note

1. Transistor mounted on an FR4 printed-circuit board.

RATING CHARACTERISTIC CURVES (2SD1664GP-A)

CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specipied.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
BV_{CBO}	collector-base breakdown voltage	$I_E = 0; I_C = 50\text{ }\mu\text{A}$	40	—	V
BV_{CEO}	collector-emitter breakdown voltage	$I_B = 0; I_C = 1\text{ mA}$	32	—	V
BV_{EBO}	emitter-base breakdown voltage	$I_C = 0; I_E = 50\text{ }\mu\text{A}$	5	—	V
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = 20\text{ V}$	—	500	nA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 4\text{ V}$	—	500	nA
h_{FE}	DC current gain	$V_{CE} = 3\text{ V}$; note 1 $I_C = 100\text{ mA}$	82	390	
V_{CEsat}	collector-emitter saturation voltage	$I_C \approx 500\text{ mA}, I_B = 50\text{ mA}$	—	400	mV
C_c	collector capacitance	$I_E = I_B = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$	—	15 Typ.	pF
f_T	transition frequency	$I_C = -50\text{ mA}; V_{CE} = 5\text{ V};$ $f = 100\text{ MHz}$	—	150 Typ.	MHz

Note

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

RATING CHARACTERISTIC CURVES (2SD1664GP-A)

Typical Electrical Characteristics

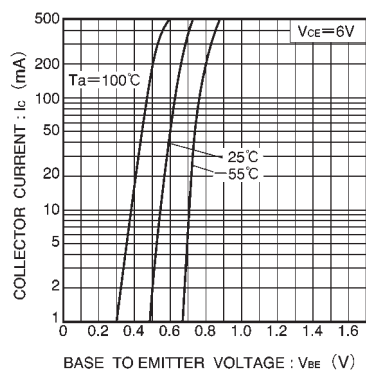


Fig.1 Grounded emitter propagation characteristics

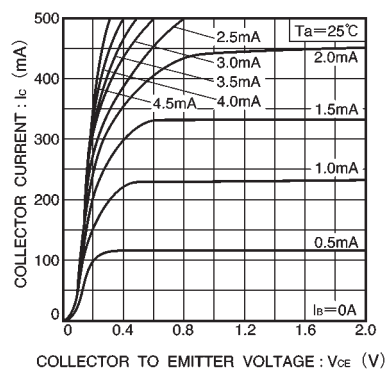


Fig.2 Grounded emitter output characteristics

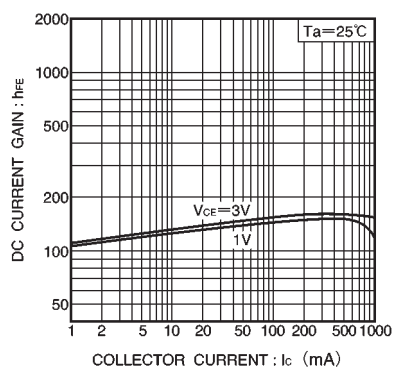


Fig.3 DC current gain vs. collector current (I)

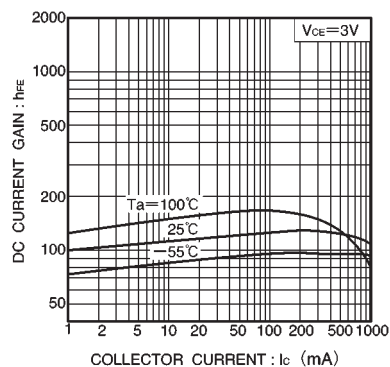


Fig.4 DC current gain vs. collector current (II)

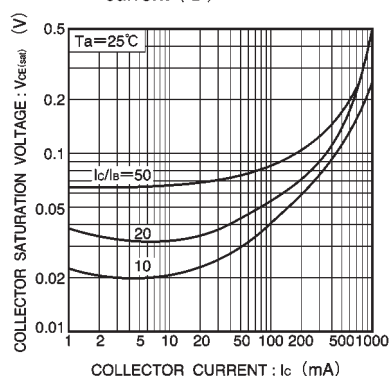


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

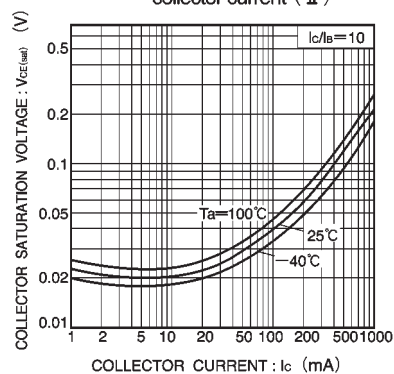


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

RATING CHARACTERISTIC CURVES (2SD1664GP-A)

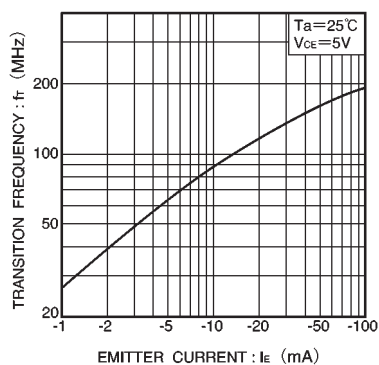


Fig.7 Gain bandwidth product vs. emitter current

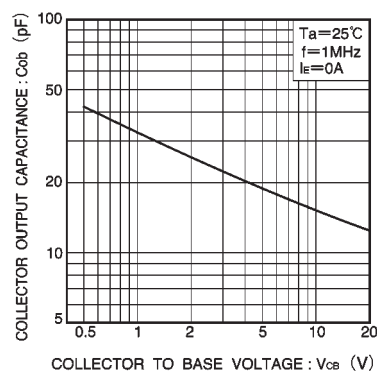


Fig.8 Collector output capacitance vs. collector-base voltage

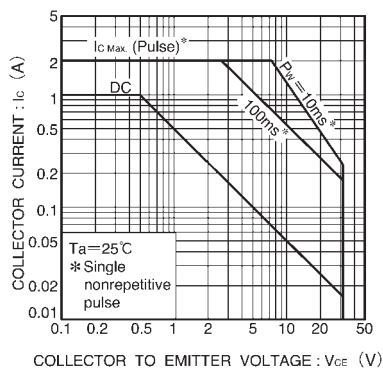


Fig.9 Safe operating area (2SD1664)

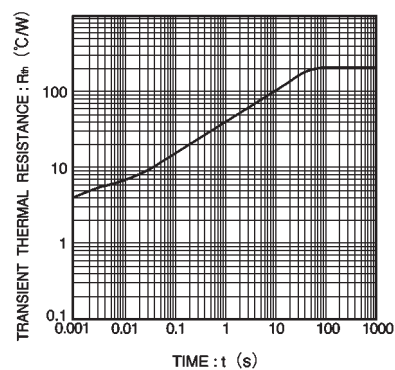


Fig.10 Transient thermal resistance (2SD1664)

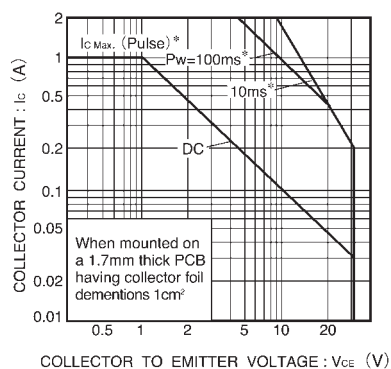


Fig.11 Safe operating area

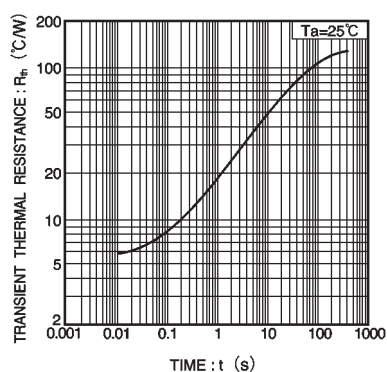


Fig.12 Transient thermal resistance