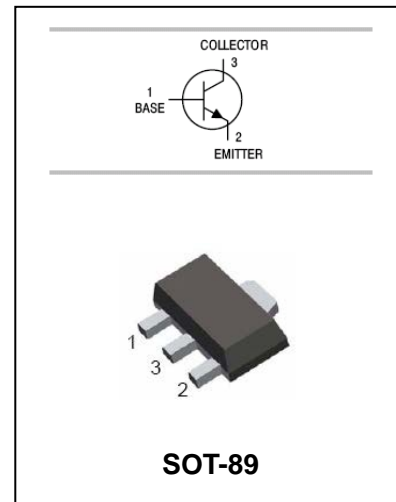


Medium Power Transistor

2SD1664

FEATURES

- Low saturation voltage: $V_{CE(sat)} = 0.15V(\text{typ.})$
($I_C/I_B = 500mA / 50mA$)
- $P_C=0.5W$
- Complement the 2SB1132



APPLICATIONS

- NPN silicon transistor

ORDERING INFORMATION

Type No.	Marking	Package Code
2SD1664□	DAP/DAQ/DAR	SOT-89

□: none is for Lead Free package;

“G” is for Halogen Free package.

MAXIMUM RATING @ $T_a=25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	32	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	1	A
I_C	Collector Current -pulse	2	A
P_C	Collector Dissipation	500	mW
T_J, T_{STG}	Junction and Storage Temperature	-55 to +150	$^\circ\text{C}$

Medium Power Transistor

2SD1664

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=50\mu A, I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	32			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=50\mu A, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=20V, I_E=0$			0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4V, I_C=0$			0.5	μA
DC current gain	h_{FE}	$V_{CE}=3V, I_C=100mA$	82		390	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$		0.15	0.4	V
Transition frequency	f_T	$V_{CE}=5V, I_C=-50mA,$ $f=100MHz$		150		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$		15		pF

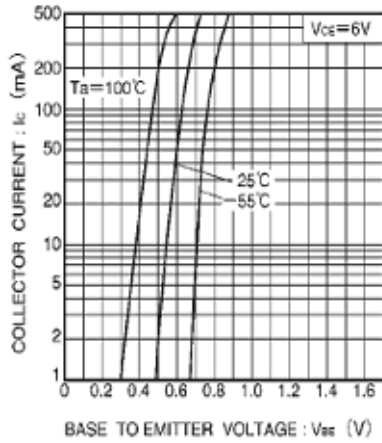
CLASSIFICATION OF $h_{FE(1)}$

Rank	P	Q	R
Range	82-180	120-270	180-390
MARKING	DAP	DAQ	DAR

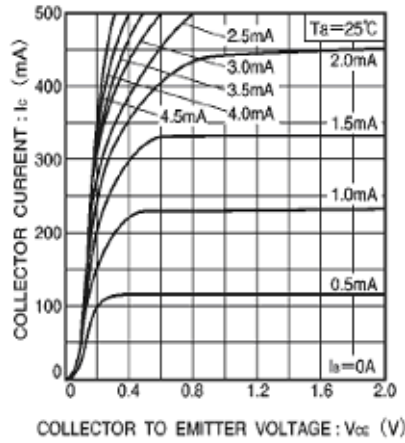
Medium Power Transistor

2SD1664

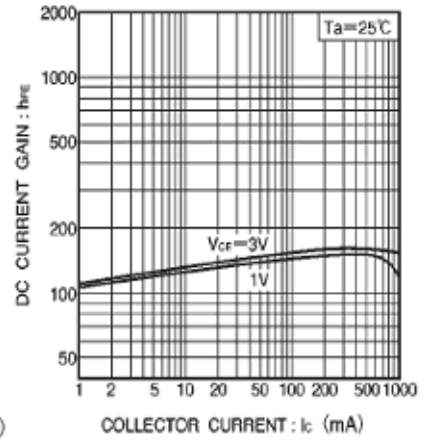
TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



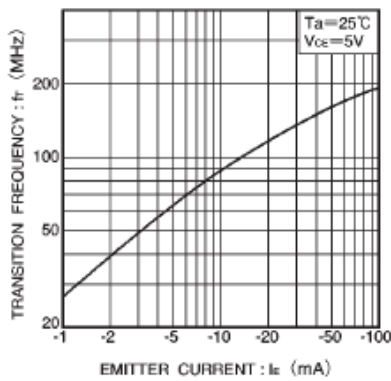
Grounded emitter propagation characteristics



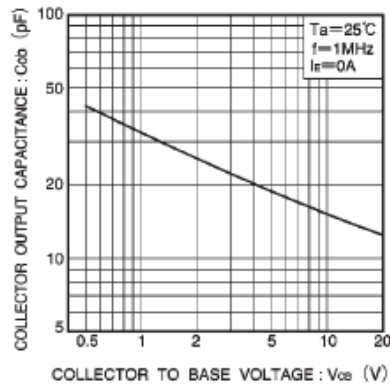
Grounded emitter output characteristics



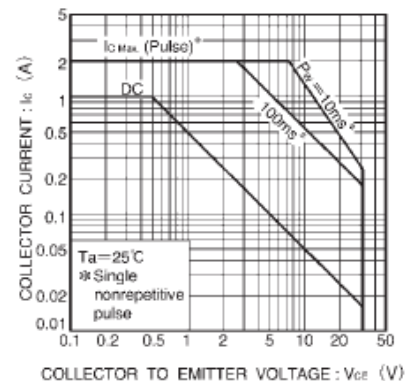
DC current gain vs. collector current



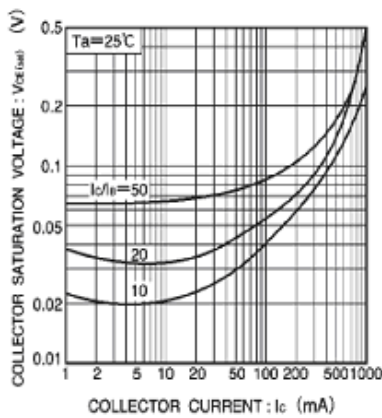
Gain bandwidth product vs. emitter current



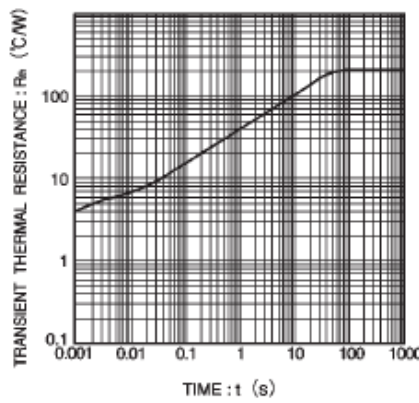
Collector output capacitance vs. collector-base voltage



Safe operating area



Collector-emitter saturation voltage vs. collector current



Transient thermal resistance

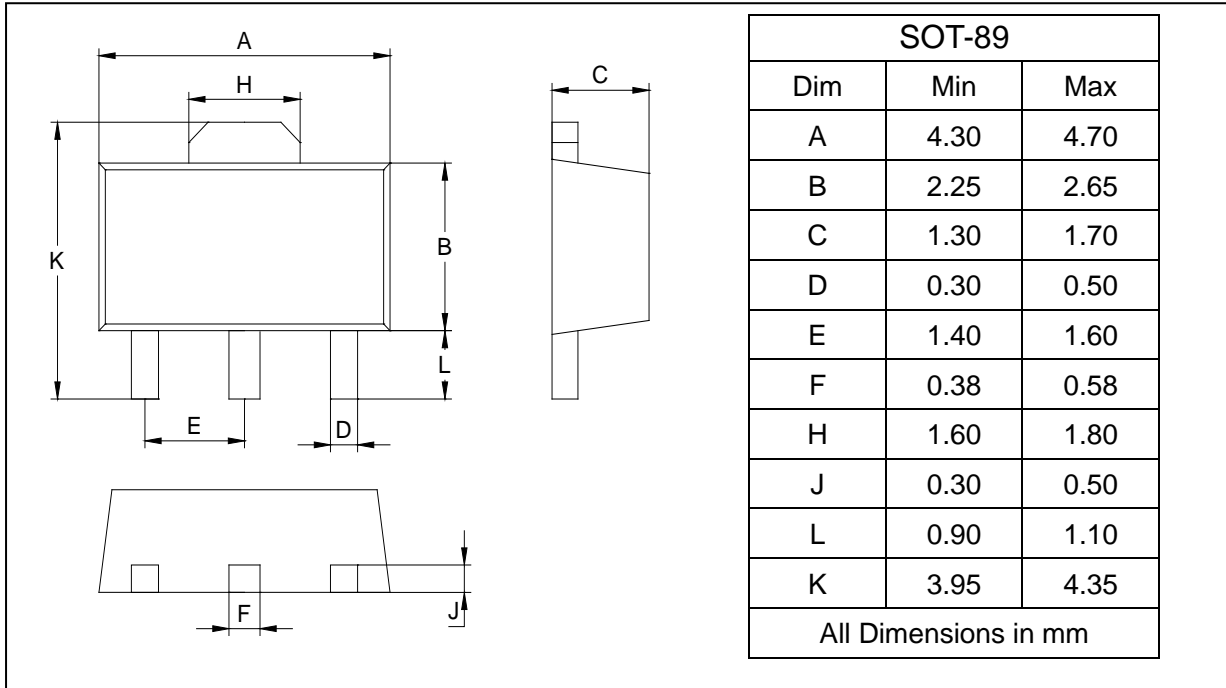
Medium Power Transistor

2SD1664

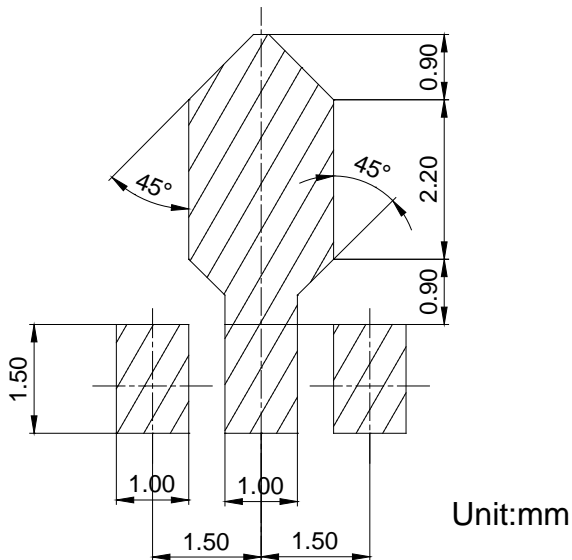
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
2SD1664	SOT-89	1000pcs / Tape & Reel