

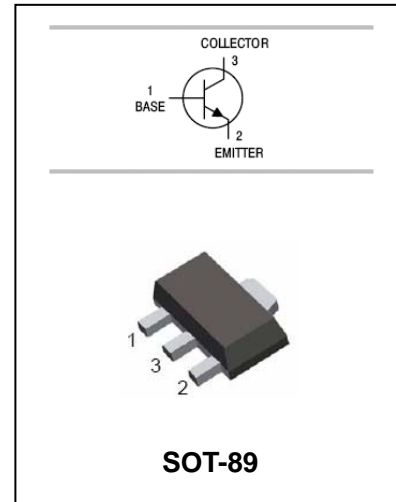


## Medium Power Transistor(32V,1A)

## 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

### 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	$^\circ\text{C}$



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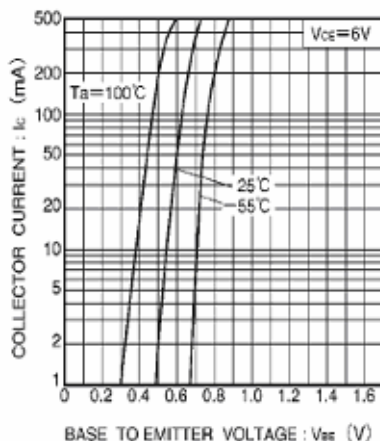
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

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	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			0.5	$\mu A$
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

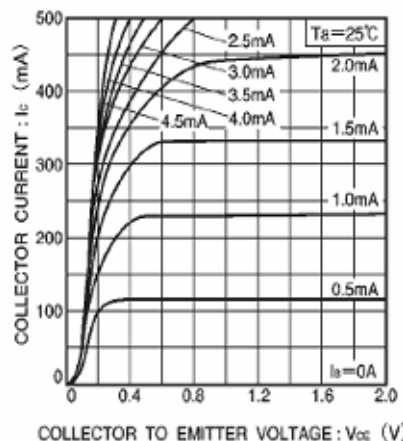
CLASSIFICATION OF  $h_{FE(1)}$

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

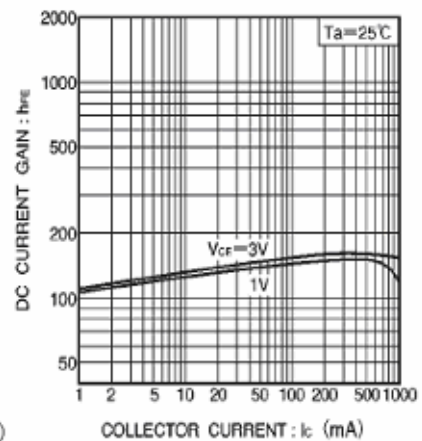
TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



Grounded emitter propagation characteristics



Grounded emitter output characteristics

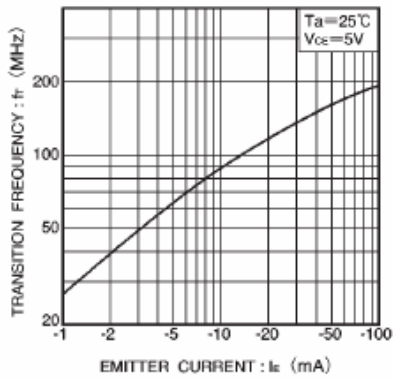


DC current gain vs. collector current

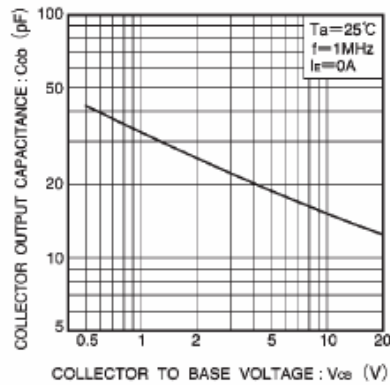


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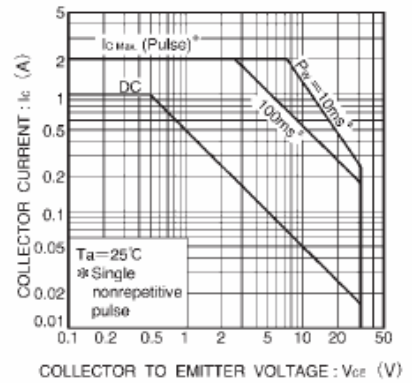
2SD1664



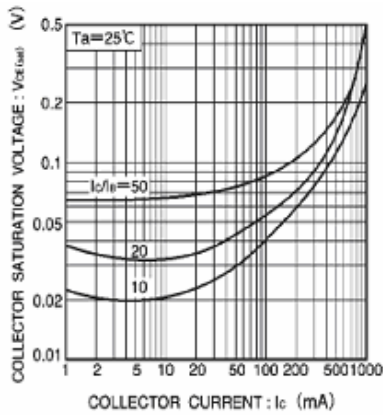
Gain bandwidth product vs. emitter current



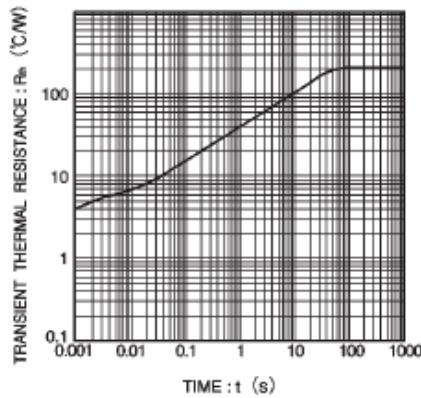
Collector output capacitance vs. collector-base voltage



Safe operating area



Collector-emitter saturation voltage vs. collector current



Transient thermal resistance

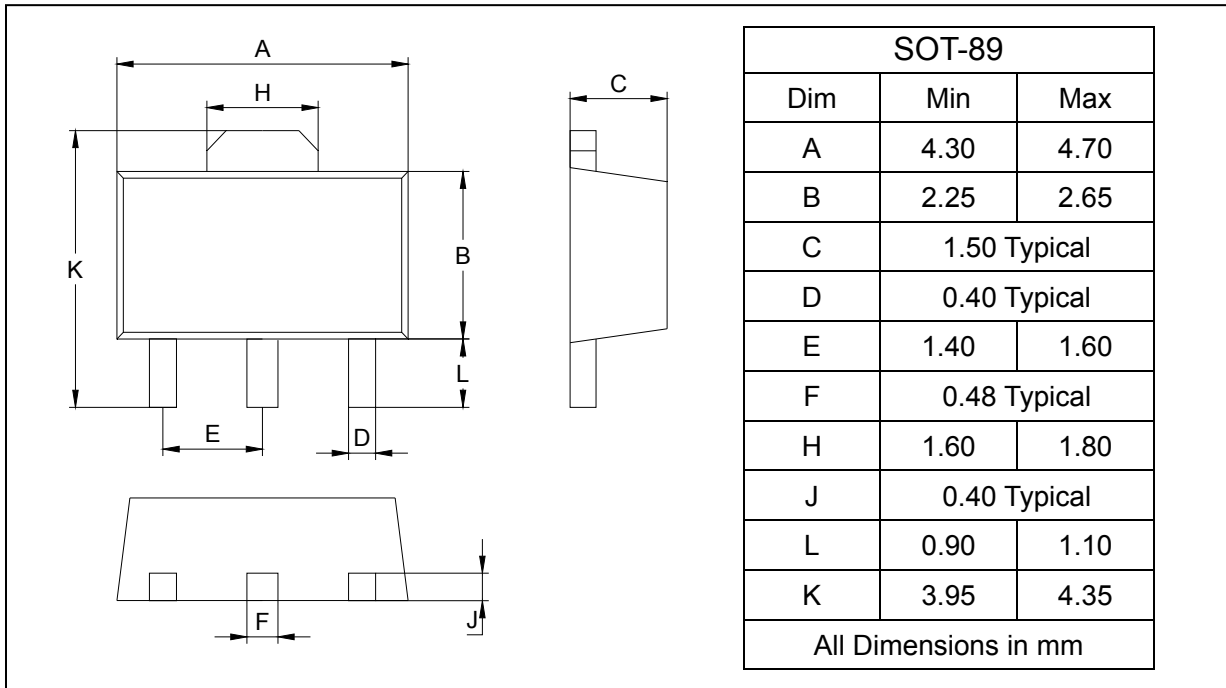
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**2SD1664**

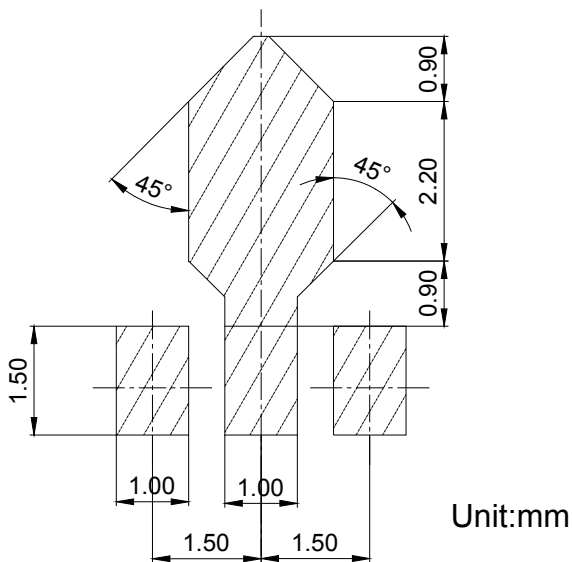
**PACKAGE OUTLINE**

Plastic surface mounted package

SOT-89



**SOLDERING FOOTPRINT**



**PACKAGE INFORMATION**

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