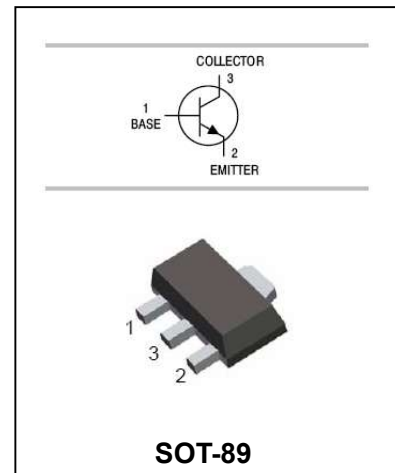


## NPN SILICON EPITAXIAL TRANSISTOR

## 2SD1005

### FEATURES

- High Collector to Base Voltage.
- Excellent DC Current Gain Linearity.
- Complements to PNP type 2SB804.



### ORDERING INFORMATION

Type No.	Marking	Package Code
2SD1005	BW/BV/BU	SOT-89

### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	80	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current	1	A
$P_C$	Collector power dissipation	500	mW
$T_j$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55 to +150	°C

# NPN SILICON EPITAXIAL TRANSISTOR

# 2SD1005

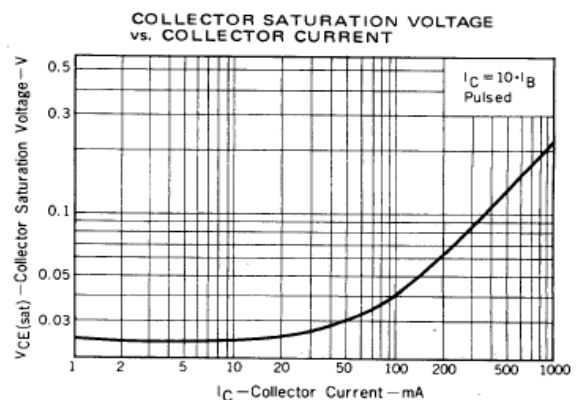
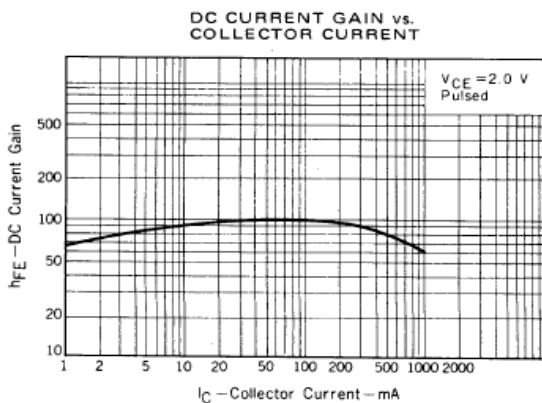
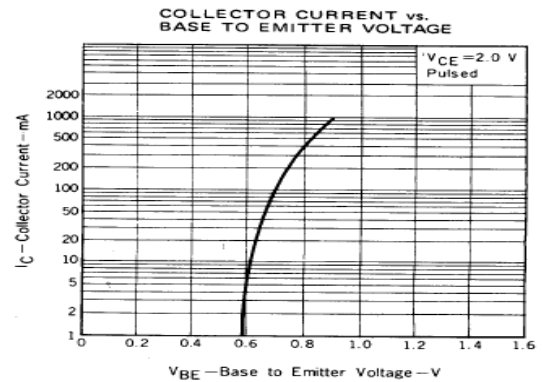
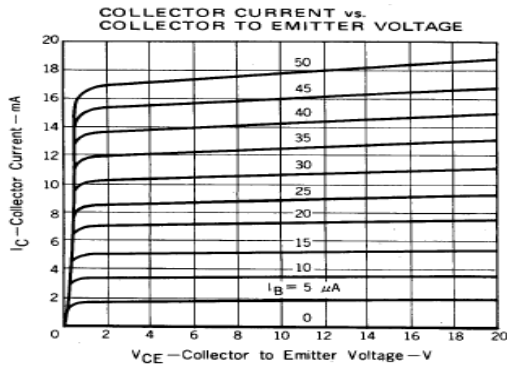
## ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector cut-off current	$I_{CBO}$	$V_{CB}=100V, I_E=0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			0.1	$\mu A$
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C/I_B=500mA/50mA$		0.15	0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C/I_B=500mA/50mA$		0.9	1.5	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=10V, I_C=10mA$	0.6	0.63	0.7	V
DC current gain(note)	$h_{FE}$	$V_{CE}=2V, I_C=100mA$	90	200	400	
		$V_{CE}=2V, I_C=500mA$	25	80		
Current gain bandwidth product	$f_T$	$V_{CE}=5V, I_E=10mA$		160		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz, I_E=0A$		12		pF

## CLASSIFICATION OF $h_{FE2}$

RANGE	90-180	135-270	200-400
MARKING	BW	BV	BU

## TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified



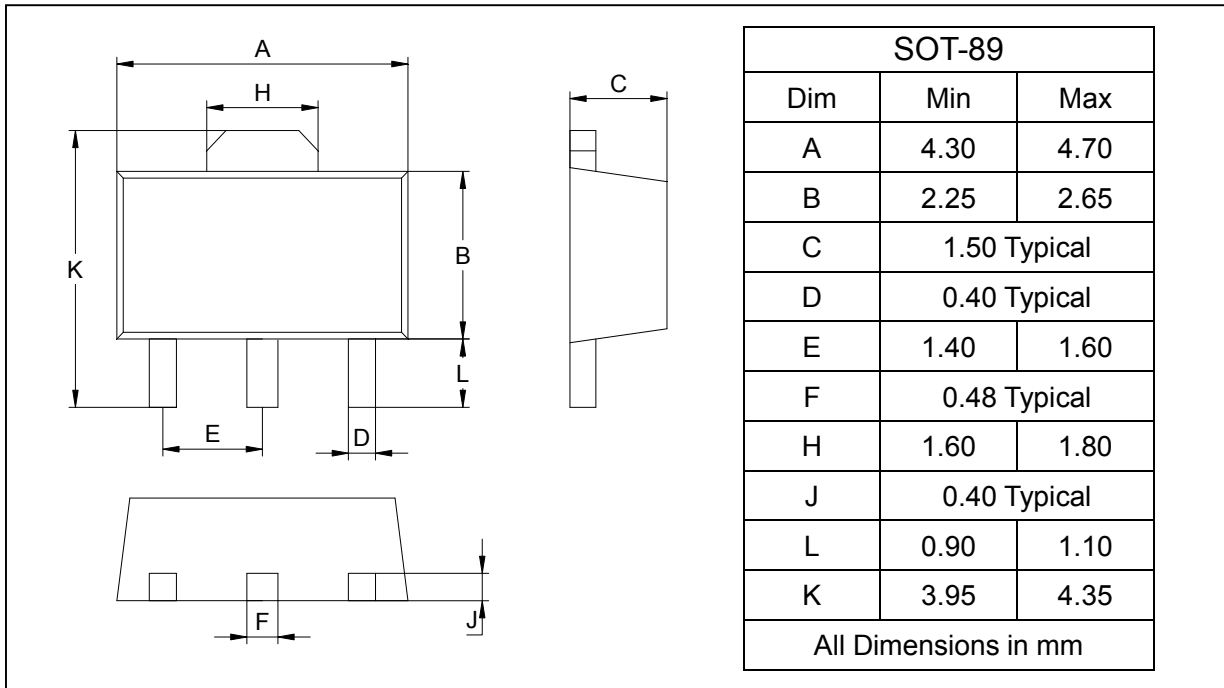
# NPN SILICON EPITAXIAL TRANSISTOR

# 2SD1005

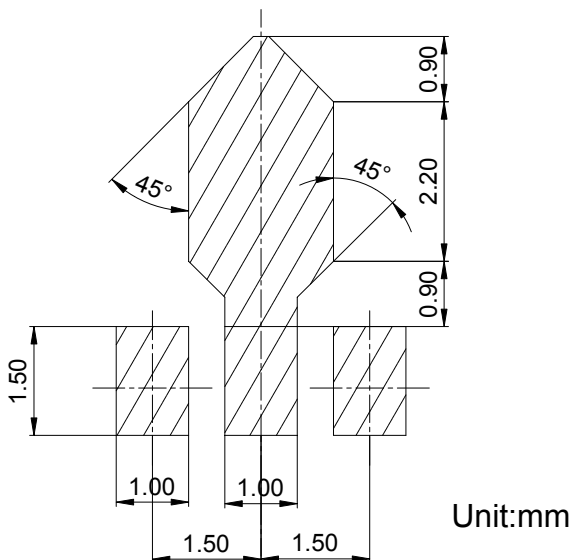
## PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



## SOLDERING FOOTPRINT



## PACKAGE INFORMATION

Device	Package	Shipping
2SD1005	SOT-89	1000/Tape&Reel