

**Silicon NPN Power Transistor**

**2SC5099**

**DESCRIPTION**

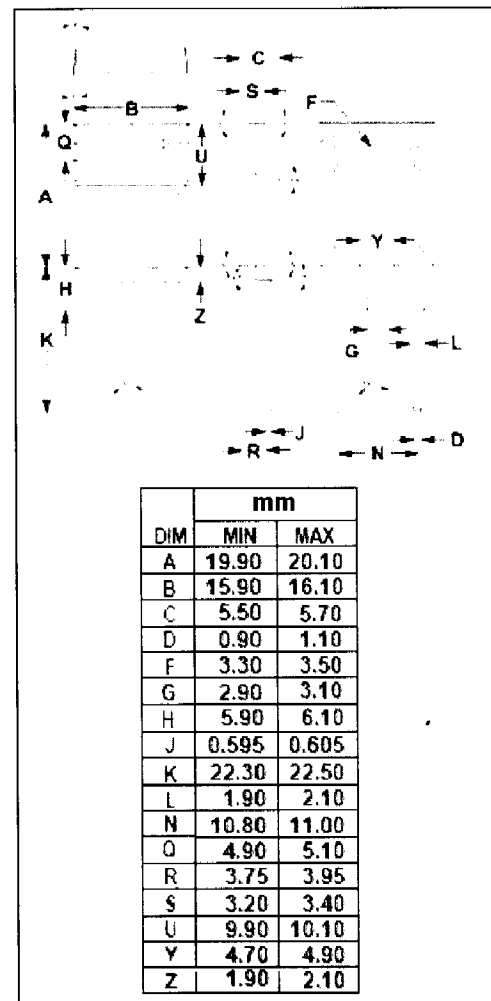
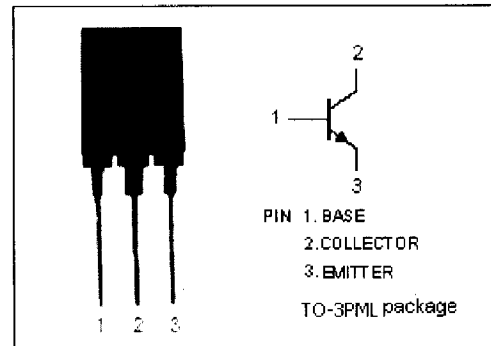
- Collector-Emitter Breakdown Voltage-  
 $V_{(BR)CEO} = 80V(\text{Min})$
- Good Linearity of  $h_{FE}$
- Complement to Type 2SA1907

**APPLICATIONS**

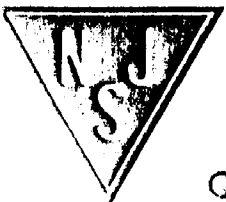
- Designed for audio and general purpose applications

**ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	120	V
$V_{CEO}$	Collector-Emitter Voltage	80	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	6	A
$I_B$	Base Current-Continuous	3	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	60	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



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## ELECTRICAL CHARACTERISTICS

$T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 50\text{mA}; I_B = 0$	80			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 2\text{A}; I_B = 0.2\text{A}$			0.5	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 80\text{V}; I_E = 0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB} = 6\text{V}; I_C = 0$			10	$\mu\text{A}$
$h_{FE}$	DC Current Gain	$I_C = 2\text{A}; V_{CE} = 4\text{V}$	50			
$C_{OB}$	Collector Output Capacitance	$I_E = 0; V_{CB} = 10\text{V}; f = 1\text{MHz}$		110		pF
$f_T$	Current-Gain—Bandwidth Product	$I_E = -0.5\text{A}; V_{CE} = 12\text{V}$		20		MHz

### Switching times

$t_{on}$	Turn-on Time	$I_C = 3\text{A}, R_L = 10\ \Omega,$ $I_{B1} = -I_{B2} = 0.3\text{A}, V_{CC} = 30\text{V}$		0.16		$\mu\text{s}$
$t_{stg}$	Storage Time			2.60		$\mu\text{s}$
$t_f$	Fall Time			0.34		$\mu\text{s}$

### ◆ $h_{FE}$ classifications

O	P	Y
50-100	70-140	90-180