

New Jersey Semi-Conductor Products, Inc.

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2N2891

- $V_{(BR)CEO} = 80V$ (Min).
- Hermetic TO-39 Metal Package.
- Ideally Suited For Low Frequency Large Signal Applications (High Voltage).
- Screening Options Available

SILICON NPN TRANSISTOR

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise stated)

V_{CBO}	Collector – Base Voltage	100V
V_{CEO}	Collector – Emitter Voltage	80V
V_{EBO}	Emitter – Base Voltage	5V
I_C	Continuous Collector Current	3A
I_{CM}	Peak Collector Current	5A
I_B	Base Current	0.5A
P_D	Total Power Dissipation at $T_A = 25^\circ C$	0.8W
	Derate Above $25^\circ C$	$4.57\text{mW}/^\circ C$
P_D	Total Power Dissipation at $T_C = 25^\circ C$	5W
	Derate Above $25^\circ C$	$28.6\text{mW}/^\circ C$
T_J	Junction Temperature Range	-65 to +200°C
T_{stg}	Storage Temperature Range	-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	218.75	°C/W
$R_{\theta JC}$	Thermal Resistance, Junction To Case	35	°C/W



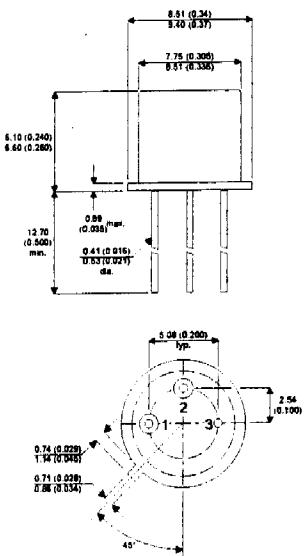
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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$	$I_B = 0$	80			V
$V_{(BR)CBO}^{(1)}$	Collector-Base Breakdown Voltage	$I_C = 0.1\text{mA}$	$I_E = 0$	100			
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 60\text{V}$	$I_B = 0$			50	μA
I_{CEX}	Collector Cut-Off Current	$V_{CE} = 60\text{V}$	$V_{BE} = -2\text{V}$			0.1	
			$T_A = 150^\circ\text{C}$			100	
		$V_{CE} = 90\text{V}$	$V_{BE} = -2\text{V}$			100	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 5\text{V}$	$I_C = 0$			10	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 100\text{mA}$	$V_{CE} = 2\text{V}$	35			V
		$I_C = 1.0\text{A}$	$V_{CE} = 2\text{V}$	50		150	
		$I_C = 2\text{A}$	$V_{CE} = 5\text{V}$	40			
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 1.0\text{A}$	$I_B = 100\text{mA}$			0.5	V
		$I_C = 2\text{A}$	$I_B = 200\text{mA}$			0.75	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 1.0\text{A}$	$I_B = 100\text{mA}$			1.2	V
		$I_C = 2\text{A}$	$I_B = 200\text{mA}$			1.3	

DYNAMIC CHARACTERISTICS

h_{fe}	Small-Signal Current Gain	$I_C = 50\text{mA}$ $f = 1.0\text{KHz}$	$V_{CE} = 10\text{V}$	50		350	
f_T	Transition Frequency	$I_C = 200\text{mA}$ $f = 20\text{MHz}$	$V_{CE} = 10\text{V}$	30			MHz
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $f = 1.0\text{MHz}$	$I_E = 0$		70	100	pF
t_{on}	Turn-On Time	$I_C = 1.0\text{A}$ $I_{B1} = 50\text{mA}$	$V_{CC} = 20\text{V}$			0.3	μs
t_{off}	Turn-Off Time	$I_C = 1.0\text{A}$ $I_{B1} = 50\text{mA}$	$V_{CC} = 20\text{V}$ $I_{B2} = -50\text{mA}$			1.5	



TO-39 (TO-205AD) METAL PACKAGE
Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector