

**Silicon NPN Darlington Power Transistor**

**2SB1587**

**DESCRIPTION**

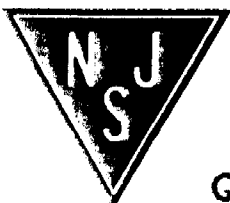
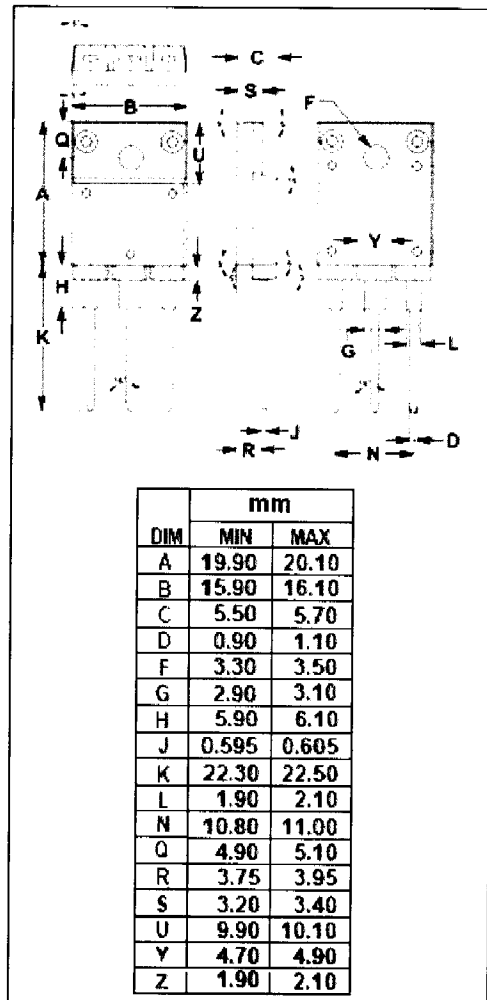
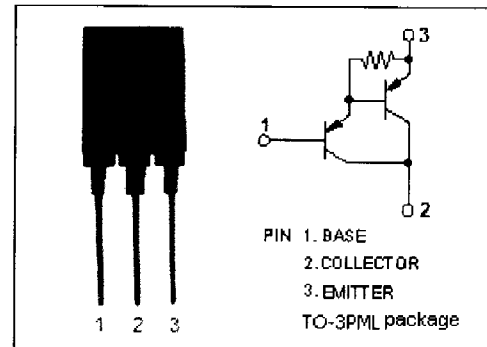
- Collector-Emitter Breakdown Voltage-  
 :  $V_{(BR)CEO} = -150V(\text{Min})$
- High DC Current Gain-  
 :  $h_{FE} = 5000(\text{Min.}) @ (I_C = -6A, V_{CE} = -4V)$
- Low Collector Saturation Voltage-  
 :  $V_{CE(sat)} = -2.5V(\text{Max}) @ (I_C = -6A, I_B = -6mA)$
- Complement to Type 2SD2438

**APPLICATIONS**

- Designed for audio, series regulator and general purpose applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-160	V
$V_{CEO}$	Collector-Emitter Voltage	-150	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current-Continuous	-8	A
$I_B$	Base Current-Continuous	-1	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	75	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^\circ\text{C}$



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## ELECTRICAL CHARACTERISTICS

T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>C</sub> = 30mA; I <sub>B</sub> = 0	-150			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 6A; I <sub>B</sub> = 6mA			-2.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 6A; I <sub>B</sub> = 6mA			-3.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 160V; I <sub>E</sub> = 0			-100	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			-100	μ A
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 6A; V <sub>CE</sub> = 4V	5000			
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f <sub>test</sub> = 1MHz		85		pF
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>E</sub> = -1A; V <sub>CE</sub> = 12V		65		MHz

### Switching Times

t <sub>on</sub>	Turn-on Time	V <sub>CC</sub> = 60V, R <sub>L</sub> = 10Ω, I <sub>C</sub> = 6A; I <sub>B1</sub> = -I <sub>B2</sub> = 6mA,		0.7		μ s
t <sub>stg</sub>	Storage Time			3.6		μ s
t <sub>f</sub>	Fall Time			0.9		μ s

### ◆ h<sub>FE</sub> Classifications

O	P	Y
5000-12000	6500-20000	15000-30000