

**Silicon PNP Darlington Power Transistor**

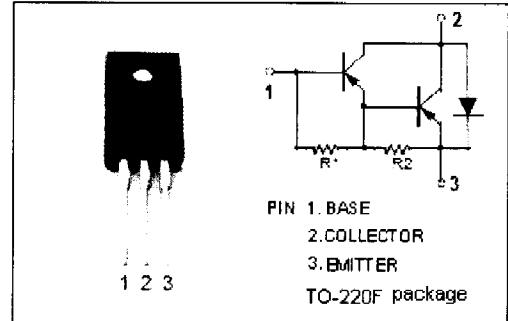
**2SB1481**

**DESCRIPTION**

- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = -100V(\text{Min})$
- High DC Current Gain-  
:  $h_{FE} = 2000(\text{Min})@ (V_{CE} = -2V, I_C = -1.5A)$
- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = -1.5V(\text{Max})@ (I_C = -3A, I_B = -6mA)$
- Complement to Type 2SD2241

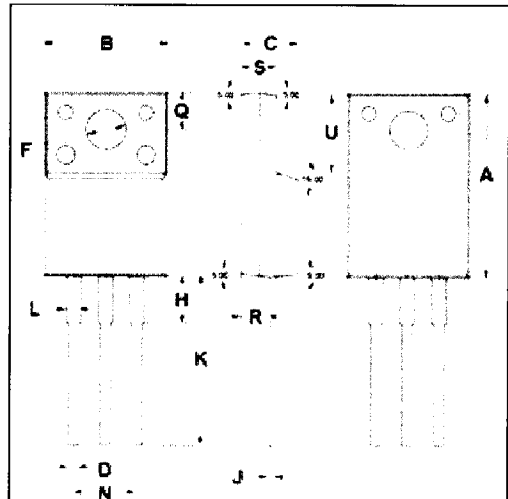
**APPLICATIONS**

- High power switching applications.
- Hammer drive, pulse motor drive applications.



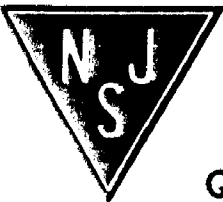
**ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )**

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	-100	V
$V_{CEO}$	Collector-Emitter Voltage	-100	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current-Continuous	-4	A
$I_{CM}$	Collector Current-Pulse	-6	A
$I_B$	Base Current-Continuous	-0.3	A
$P_C$	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	2	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	25	
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	14.95	15.05
B	10.00	10.10
C	4.40	4.60
D	0.75	0.80
F	3.10	3.30
H	3.70	3.90
J	0.50	0.70
K	13.4	13.6
L	1.10	1.30
N	5.00	5.20
Q	2.70	2.90
R	2.20	2.40
S	2.65	2.85
U	6.40	6.60

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# 2SB1481

## 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> = -10mA; I <sub>B</sub> = 0	-100			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -3A; I <sub>B</sub> = -6mA			-1.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = -3A; I <sub>B</sub> = -6mA			-2.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = -100V; I <sub>E</sub> = 0			-2.0	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = -5V; I <sub>C</sub> = 0			-2.5	mA
h <sub>FE-1</sub>	DC Current Gain	I <sub>C</sub> = -1.5A; V <sub>CE</sub> = -2V	2000			
h <sub>FE-2</sub>	DC Current Gain	I <sub>C</sub> = -3A; V <sub>CE</sub> = -2V	1000			
V <sub>ECF</sub>	C-E Diode Forward Voltage	I <sub>F</sub> = 1A			2.0	V

## Switching Times

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = -3A, I <sub>B1</sub> = -I <sub>B2</sub> = -6mA, V <sub>CC</sub> ≈ -30V; R <sub>L</sub> = 10 Ω		0.15		μ s
t <sub>stg</sub>	Storage Time			0.80		μ s
t <sub>f</sub>	Fall Time			0.40		μ s