

**isc Silicon NPN Darlington Power Transistor**
**2SD2439**
**DESCRIPTION**

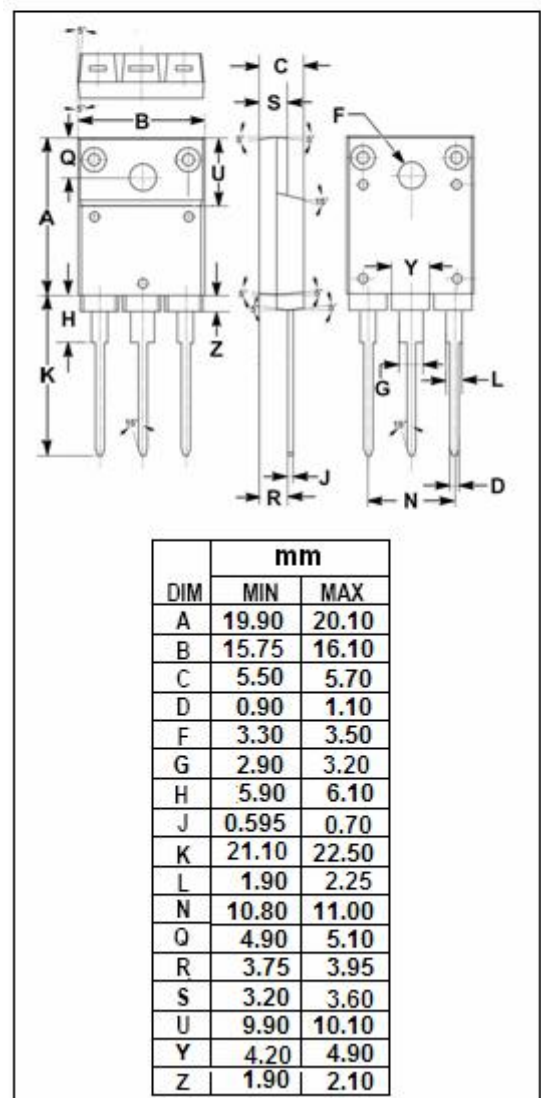
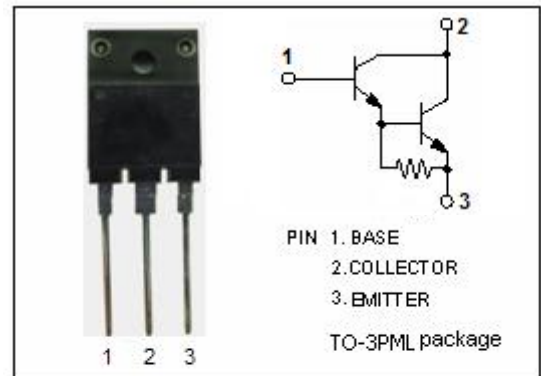
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 150V(\text{Min})$
- High DC Current Gain-  
:  $h_{FE} = 5000(\text{Min.}) @ (I_C = 7A, V_{CE} = 4V)$
- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 2.5V(\text{Max}) @ (I_C = 7A, I_B = 7mA)$
- Complement to Type 2SB1588
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**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	10	A
$I_B$	Base Current-Continuous	1	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	80	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~150	$^\circ\text{C}$



## isc Silicon NPN Darlington Power Transistor

2SD2439

## 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> = 7A; I <sub>B</sub> = 7mA			2.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 7A; I <sub>B</sub> = 7mA			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> = 7A; 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		95		pF
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>E</sub> = -2A ; V <sub>CE</sub> = 12V		55		MHz

◆ h<sub>FE</sub> Classifications

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

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