

isc Silicon NPN Darlington Power Transistor
2SD2438
DESCRIPTION

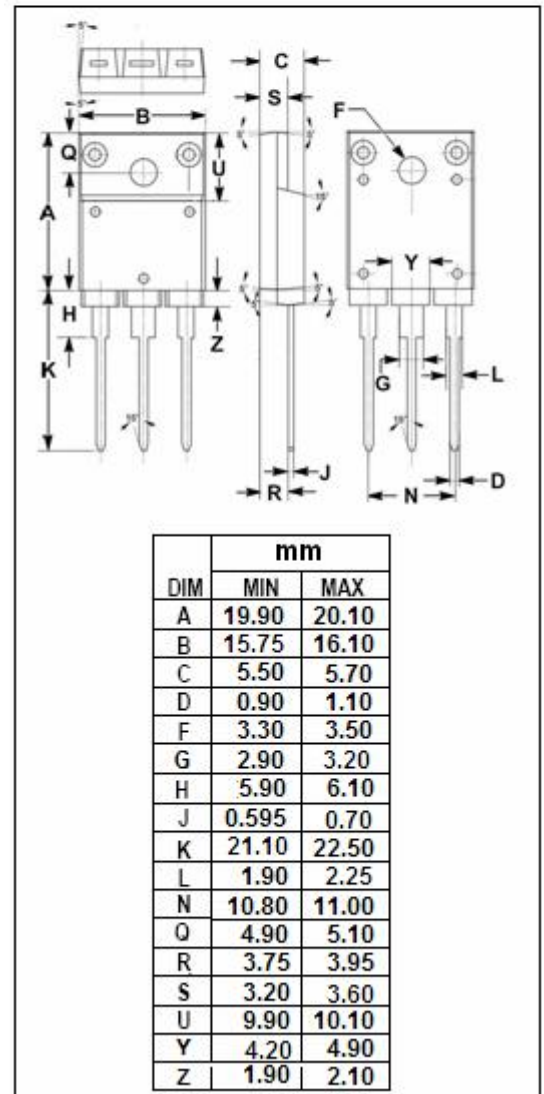
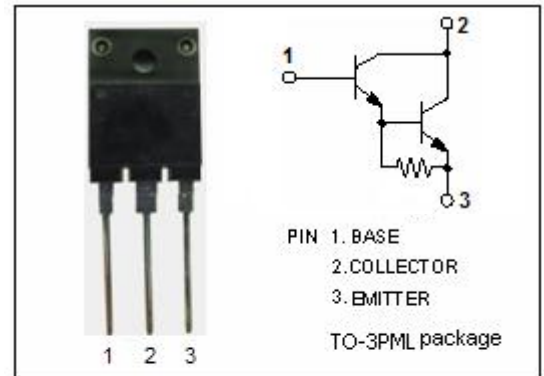
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 150V(\text{Min})$
- High DC Current Gain-
: $h_{FE} = 5000(\text{Min.}) @ (I_C = 6A, V_{CE} = 4V)$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 2.5V(\text{Max}) @ (I_C = 6A, I_B = 6mA)$
- Complement to Type 2SB1587
- Minimum Lot-to-Lot variations 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	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_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C = 30mA ; I _B = 0	150			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 6A; I _B = 6mA			2.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 6A; I _B = 6mA			3.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 160V; I _E = 0			100	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0			100	μ A
h _{FE}	DC Current Gain	I _C = 6A; V _{CE} = 4V	5000			
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f _{test} = 1MHz		85		pF
f _T	Current-Gain—Bandwidth Product	I _E = -1A; V _{CE} = 12V		80		MHz
t _{stg}	Storage Time			10		μ s
t _f	Fall Time			0.9		μ s

◆ h_{FE} Classifications

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

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