

**isc Silicon NPN Darlington Power Transistor**
**2SD1670**
**DESCRIPTION**

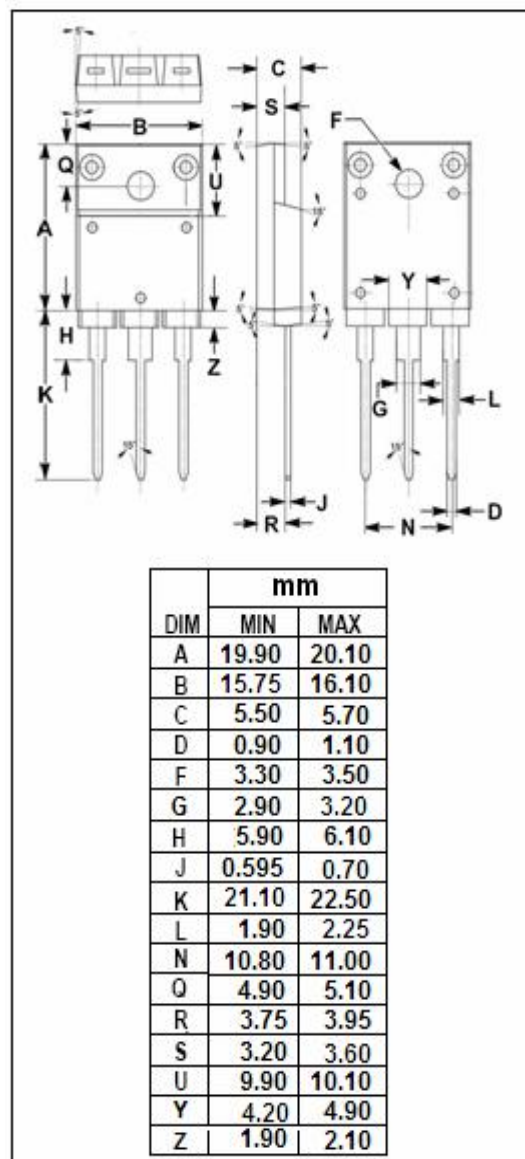
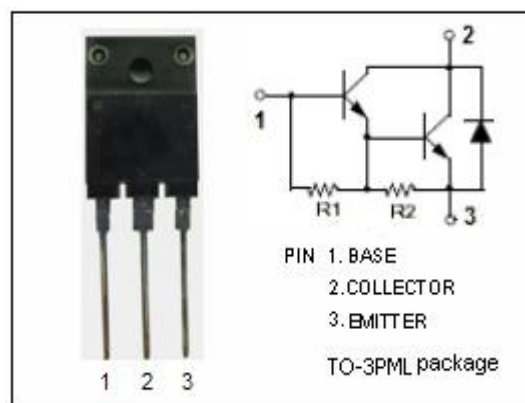
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 100V(\text{Min})$
- High DC Current Gain-  
:  $h_{FE} = 1000(\text{Min.}) @ I_C = 10A$
- Low Collector Saturation Voltage-  
:  $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 10A$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- For low speed high current switching industrial use.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	150	V
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{EBO}$	Emitter-Base Voltage	8	V
$I_C$	Collector Current-Continuous	10	A
$I_{CM}$	Collector Current-Peak	20	A
$I_B$	Base Current-Continuous	1	A
$P_C$	Collector Power Dissipation @ $T_a=25^\circ\text{C}$	3.5	W
	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	65	
$T_J$	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>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 10A; I <sub>B</sub> = 25mA			1.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 10A; I <sub>B</sub> = 25mA			2.0	V
I <sub>CB0</sub>	Collector Cutoff Current	V <sub>CB</sub> = 100V ; I <sub>E</sub> = 0			10	μ A
I <sub>EB0</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> = 0			3.0	mA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 10A; V <sub>CE</sub> = 2V	1000		30000	

## Switching Times

t <sub>on</sub>	Turn-on Time			1.0		μ s
t <sub>stg</sub>	Storage Time	V <sub>CC</sub> ≈ 50V, R <sub>L</sub> = 5 Ω , I <sub>C</sub> = 10A; I <sub>B1</sub> = I <sub>B2</sub> = 25mA,		5.0		μ s
t <sub>f</sub>	Fall Time			2.0		μ s

**◆ h<sub>FE-1</sub> Classifications**

M	L	K	J
1000-3000	2000-5000	4000-10000	8000-30000

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