

# isc Silicon NPN Power Transistor

## 2SD1650

### DESCRIPTION

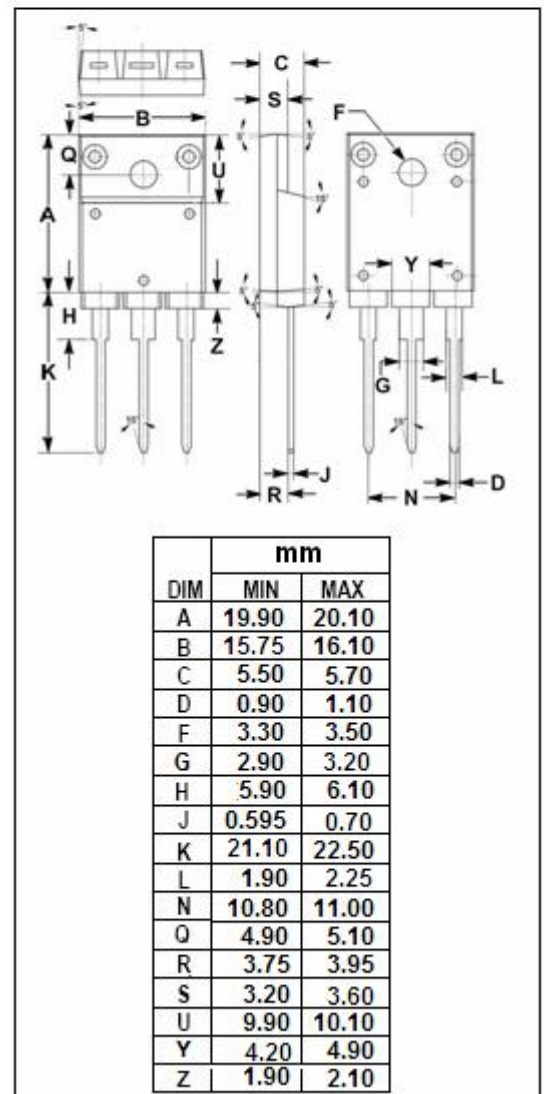
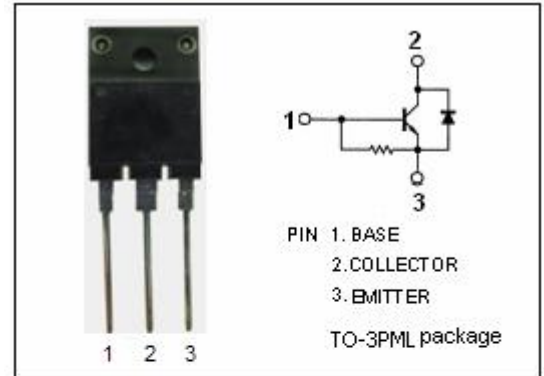
- High Breakdown Voltage-  
:  $V_{CBO} = 1500V$  (Min)
- High Switching Speed
- High Reliability
- Built-in Damper Diode
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

- Designed for horizontal output applications

### ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ C$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	1500	V
$V_{CEO}$	Collector-Emitter Voltage	800	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current- Continuous	3.5	A
$I_{CP}$	Collector Current-Peak	10	A
$P_C$	Collector Power Dissipation @ $T_C=25^\circ C$	50	W
$T_J$	Junction Temperature	150	$^\circ C$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ C$



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## ELECTRICAL CHARACTERISTICS

T<sub>c</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; R <sub>BE</sub> = ∞	800			V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> =1mA; I <sub>E</sub> = 0	1500			V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 200mA; I <sub>C</sub> = 0	7			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A; I <sub>B</sub> = 0.4A			1.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 2A; I <sub>B</sub> = 0.4A			2.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 800V ; I <sub>E</sub> = 0			10	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 4V ; I <sub>C</sub> = 0	40		130	mA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 1A ; V <sub>CE</sub> = 5V	8		30	
V <sub>ECF</sub>	C-E Diode Forward Voltage	I <sub>F</sub> = 2.0A			2.0	V
t <sub>f</sub>	Fall Time	I <sub>C</sub> = 3A , I <sub>B1</sub> = 0.8A ; I <sub>B2</sub> = 1.6A R <sub>L</sub> = 66.7 Ω ; V <sub>CC</sub> = 200V			0.7	μ s

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