

## isc Silicon NPN Darlington Power Transistor

2SD2017

## DESCRIPTION

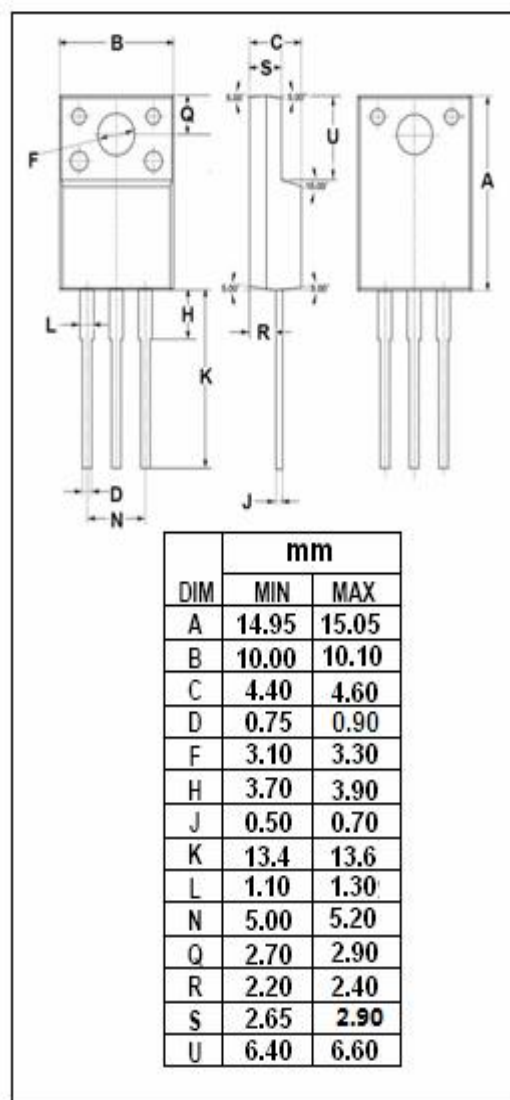
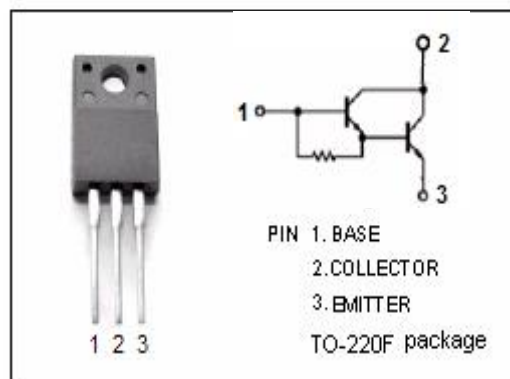
- High Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 250V(\text{Min})$
- Collector-Emitter Saturation Voltage-  
:  $V_{CE(sat)} = 1.5V(\text{Max}) @ I_C = 2A$
- High DC Current Gain  
:  $h_{FE} = 2000(\text{Min}) @ I_C = 2A, V_{CE} = 2V$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- Designed of driver of solenoid, relay and motor, and general purpose applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	300	V
$V_{CEO}$	Collector-Emitter Voltage	250	V
$V_{EBO}$	Emitter-Base Voltage	20	V
$I_C$	Collector Current-Continuous	6	A
$I_B$	Base Current-Continuous	1	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	35	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



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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> = 25mA ; I <sub>B</sub> = 0	250			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2A ; I <sub>B</sub> = 2mA			1.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 2A ; I <sub>B</sub> = 2mA			2.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 300V ; I <sub>E</sub> = 0			100	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 20V ; I <sub>C</sub> = 0			10	mA
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = 2A ; V <sub>CE</sub> = 2V	2000			
f <sub>T</sub>	Current-Gain—Bandwidth Product	I <sub>E</sub> = -1A ; V <sub>CE</sub> = 12V		20		MHz
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0 ; V <sub>CB</sub> = 10V, f <sub>test</sub> = 1MHz		65		pF

## Switching times

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 2A ; I <sub>B1</sub> = 5mA ; I <sub>B2</sub> = 10mA ; R <sub>L</sub> = 50 Ω ; V <sub>CC</sub> = 100V		0.6		μ s
t <sub>stg</sub>	Storage Time			16.0		μ s
t <sub>f</sub>	Fall Time			3.0		μ s

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