

## isc Silicon NPN Darlington Power Transistor

2SD2397

## DESCRIPTION

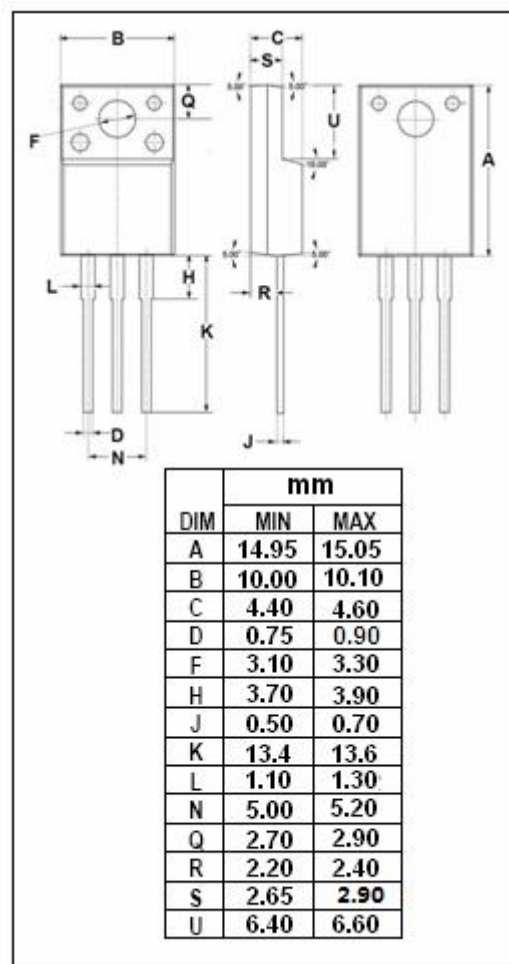
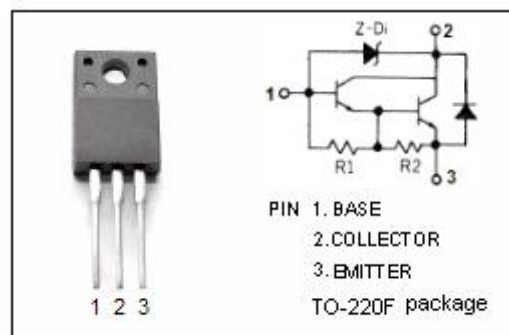
- High DC Current Gain  
:  $h_{FE} = 1000(\text{Min}) @ I_C = 1\text{A}$
- Low Collector Saturation Voltage  
:  $V_{CE(\text{sat})} = 1.5\text{V}(\text{Max.}) @ I_C = 1\text{A}$
- Built-in zener diode between collector and base
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- Motor, Relay drive

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	50-70	V
$V_{CEO}$	Collector-Emitter Voltage	50-70	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current-Continuous	2	A
$I_{CP}$	Collector Current-Peak	3	A
$P_C$	Collector Power Dissipation @ $T_a = 25^\circ\text{C}$	2.0	W
	Collector Power Dissipation @ $T_c = 25^\circ\text{C}$	20	
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



**isc Silicon NPN Darlington Power Transistor****2SD2397****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> = 5mA; I <sub>B</sub> = 0	50		70	V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage	I <sub>C</sub> =50uA; I <sub>E</sub> = 0	50		70	V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> = 3mA; I <sub>C</sub> = 0	5			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 1A; I <sub>B</sub> = 1mA			1.5	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 1A; I <sub>B</sub> = 1mA			2.0	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 40V; I <sub>E</sub> = 0			1	μ A
I <sub>EBO</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> = 1A; V <sub>CE</sub> = 2V	1000		10000	
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0 ; V <sub>CB</sub> = 10V, f <sub>test</sub> = 1MHz		25		pF