

**isc Silicon NPN Darlington Power Transistor**
**2SD798**
**DESCRIPTION**

- Collector-Emitter Sustaining Voltage-  
:  $V_{CE0(SUS)} = 300V(\text{Min})$
- Collector-Emitter Saturation Voltage-  
:  $V_{CE(sat)} = 2.0V(\text{Max}) @ I_C = 4A$
- High DC Current Gain  
:  $h_{FE} = 1500(\text{Min}) @ I_C = 2A, V_{CE} = 2V$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

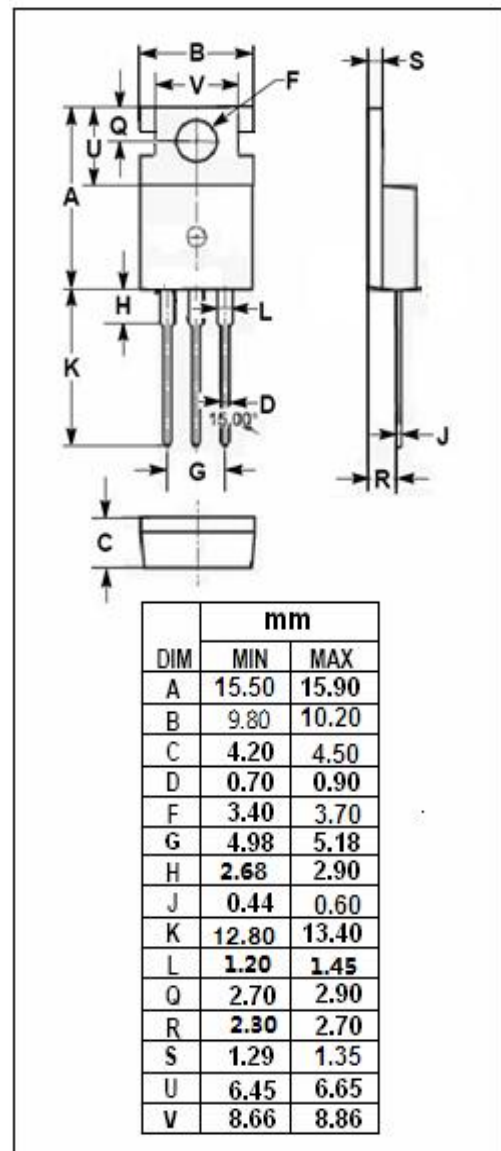
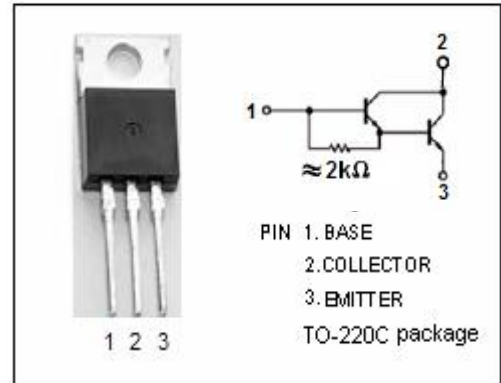
- Designed for use in high-voltage switching igniter applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	600	V
$V_{CEO}$	Collector-Emitter Voltage	300	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current-Continuous	6	A
$I_B$	Base Current-Continuous	1.0	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	30	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th-j-c}$	Thermal Resistance, Junction to Case	4.16	$^\circ\text{C/W}$



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**ELECTRICAL CHARACTERISTICS**
**T<sub>c</sub>=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 30mA ; L= 40mH	300			V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 40mA			2.0	V
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> = 4A; I <sub>B</sub> = 40mA			2.5	V
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 600V; I <sub>E</sub> = 0			500	μ A
I <sub>EBO</sub>	Emitter Cutoff Current	V <sub>EB</sub> = 5V; I <sub>C</sub> =0			2	mA
h <sub>FE -1</sub>	DC Current Gain	I <sub>C</sub> = 2A ; V <sub>CE</sub> = 2V	1500			
h <sub>FE -2</sub>	DC Current Gain	I <sub>C</sub> = 4A ; V <sub>CE</sub> = 2V	200			
C <sub>OB</sub>	Output Capacitance	I <sub>E</sub> = 0 ; V <sub>CB</sub> = 50V; f <sub>test</sub> = 1.0MHz		35		pF

**Switching times**

t <sub>on</sub>	Turn-on Time	I <sub>C</sub> = 4A , I <sub>B1</sub> = I <sub>B2</sub> = 40mA R <sub>L</sub> = 25 Ω ; V <sub>CC</sub> ≈100V		1.0		μ s
t <sub>stg</sub>	Storage Time			8.0		μ s
t <sub>f</sub>	Fall Time			5.0		μ s

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