

**isc Silicon NPN Darlington Power Transistor**

**2SD506**

**DESCRIPTION**

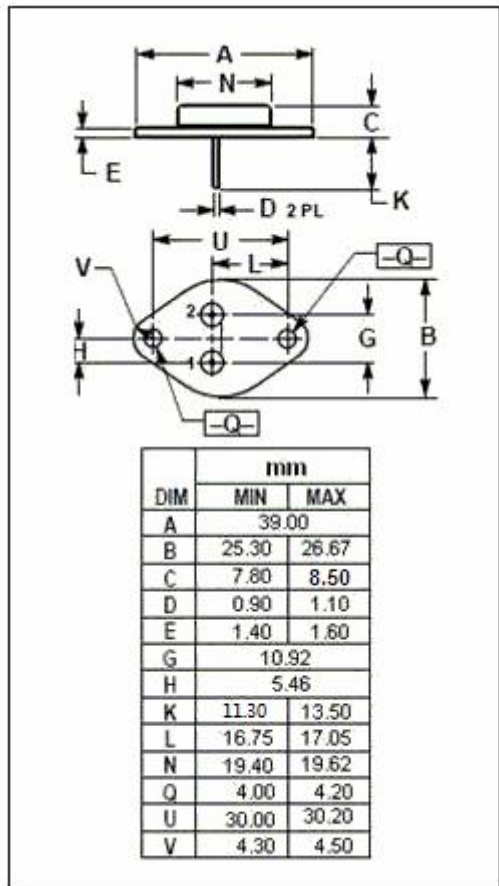
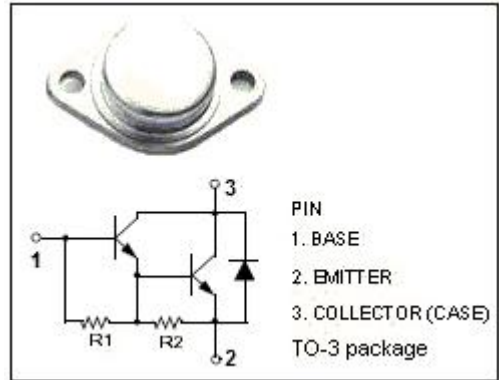
- High DC current gain-  
 $h_{FE} = 750$  (Min) @  $I_C = 6A$
- Collector-Emitter Sustaining Voltage-  
 $V_{CEO(SUS)} = 100V$ (Min)
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

- Designed for general purpose amplifier and low frequency switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	100	V
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	12	A
$I_{CM}$	Collector Current-Peak	20	A
$I_B$	Base Current	0.2	A
$P_C$	Collector Power Dissipation@ $T_C=25^{\circ}C$	150	W
$T_J$	Junction Temperature	150	$^{\circ}C$
$T_{stg}$	Storage Temperature	-65~150	$^{\circ}C$



**isc Silicon NPN Darlington Power Transistor****2SD506****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{CE0(SUS)}$	Collector-Emitter Sustaining Voltage	$I_C=30\text{mA}; I_B=0$	100		V
$V_{CE(sat)-1}$	Collector-Emitter Saturation Voltage	$I_C=6\text{A}; I_B=24\text{mA}$		2.0	V
$V_{CE(sat)-2}$	Collector-Emitter Saturation Voltage	$I_C=12\text{A}; I_B=120\text{mA}$		3.0	V
$V_{BE(on)}$	Base-Emitter On voltage	$I_C=6\text{A}; V_{CE}=3\text{V}$		2.8	V
$I_{CEO}$	Collector Cutoff current	$V_{CE}=50\text{V}; I_B=0$		1.0	mA
$I_{CBO}$	Collector Cutoff current	$V_{CB}=100\text{V}; I_E=0$ $V_{CB}=100\text{V}; I_E=0; T_C=150^\circ\text{C}$		0.5 5.0	mA
$I_{EBO}$	Emitter Cut-off current	$V_{EB}=5\text{V}; I_C=0$		2.0	mA
$h_{FE-1}$	DC Current Gain	$I_C=6\text{A}; V_{CE}=3\text{V}$	750	18000	
$h_{FE-2}$	DC Current Gain	$I_C=12\text{A}; V_{CE}=3\text{V}$	100		
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f_{test}=0.1\text{MHz}$		300	pF

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