

isc Silicon NPN Darlington Power Transistor

2SD1500

DESCRIPTION

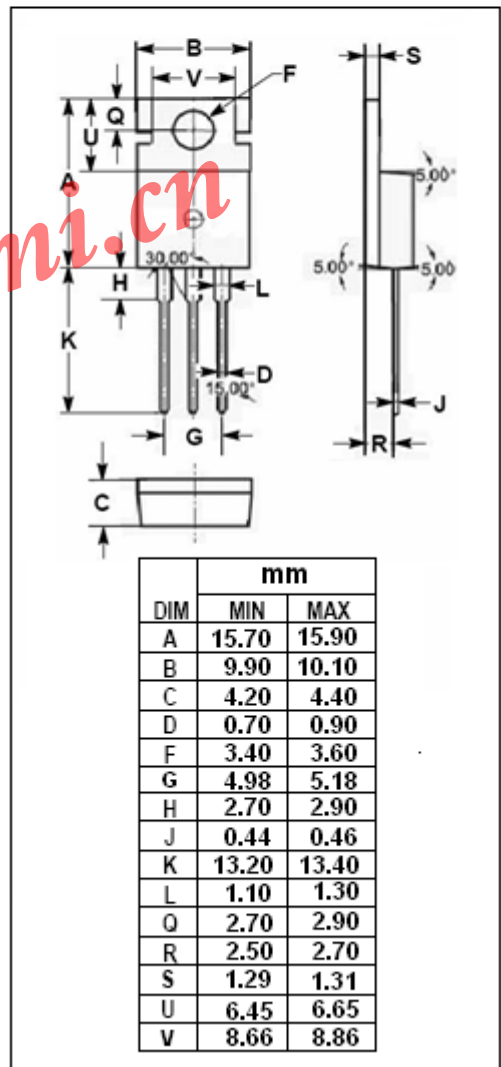
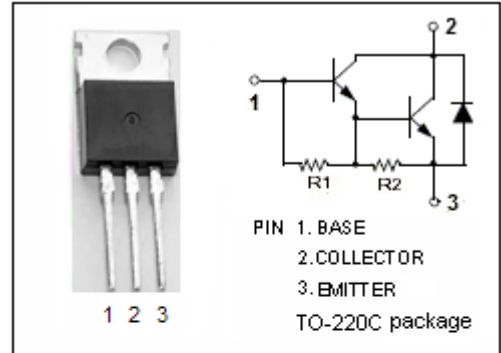
- Collector-Emitter Breakdown Voltage-  
:  $V_{(BR)CEO} = 100V(\text{Min})$
- High DC Current Gain  
:  $h_{FE} = 1000(\text{Min}) @ I_C = 10A$
- Low Saturation Voltage

APPLICATIONS

- Designed for high current switching applications.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	150	V
$V_{CEO}$	Collector-Emitter Voltage	100	V
$V_{EBO}$	Emitter-Base Voltage	8	V
$I_C$	Collector Current-Continuous	10	A
$I_B$	Base Current-Continuous	1	A
$P_C$	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	40	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



**isc Silicon NPN Darlington Power Transistor****2SD1500****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=10\text{mA}; I_B=0$	100			V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=25\text{mA}$			1.5	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=10\text{A}; I_B=25\text{mA}$			2.0	V
$I_{CBO}$	Collector Cutoff Current	$V_{CB}=150\text{V}; I_E=0$			10	$\mu\text{A}$
$I_{EBO}$	Emitter Cutoff Current	$V_{EB}=8\text{V}; I_C=0$			16	mA
$h_{FE}$	DC Current Gain	$I_C=10\text{A}; V_{CE}=2\text{V}$	1000			
$V_{ECF}$	C-E Diode Forward Voltage	$I_F=10\text{A}$			3.0	V
$C_{OB}$	Output Capacitance	$I_E=0; V_{CB}=50\text{V}; f_{test}=1\text{MHz}$		75		pF
$f_T$	Current-Gain—Bandwidth Product	$I_C=1\text{A}; V_{CE}=5\text{V}$		20		MHz

## Switching times

$t_{on}$	Turn-on Time	$I_{B1}=-I_{B2}=25\text{mA};$ $R_L=5\Omega; V_{CC}=50\text{V}$		0.6		$\mu\text{s}$
$t_{stg}$	Storage Time			3.0		$\mu\text{s}$
$t_f$	Fall Time			1.0		$\mu\text{s}$