

isc Silicon NPN Darlington Power Transistor

2SD1500

DESCRIPTION

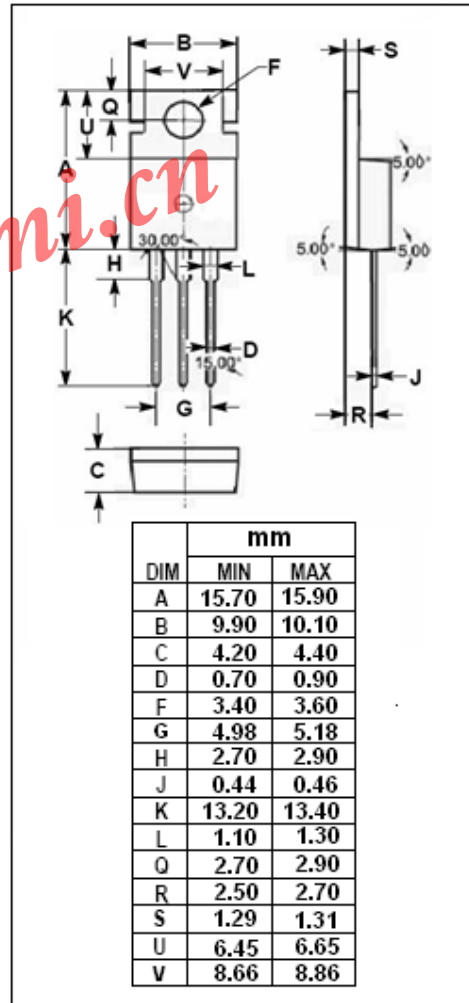
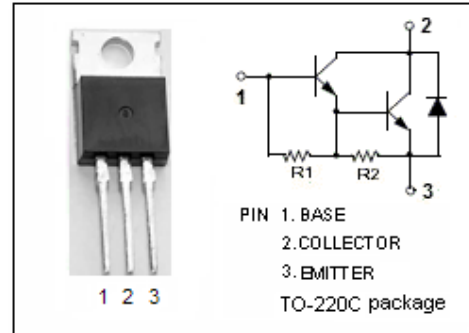
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 100V(\text{Min})$
- High DC Current Gain
: $h_{FE} = 1000(\text{Min}) @ I_C = 10A$
- Low Saturation Voltage

APPLICATIONS

- Designed for high current switching applications.

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

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 @ $T_C = 25^\circ C$	40	W
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature Range	-55~150	$^\circ C$



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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	μA
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	$I_E=0; V_{CB}=50\text{V}; f_{\text{test}}=1\text{MHz}$		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		μs
t_{stg}	Storage Time			3.0		μs
t_f	Fall Time			1.0		μs