

isc Silicon NPN Darlington Power Transistor
2SD1114
DESCRIPTION

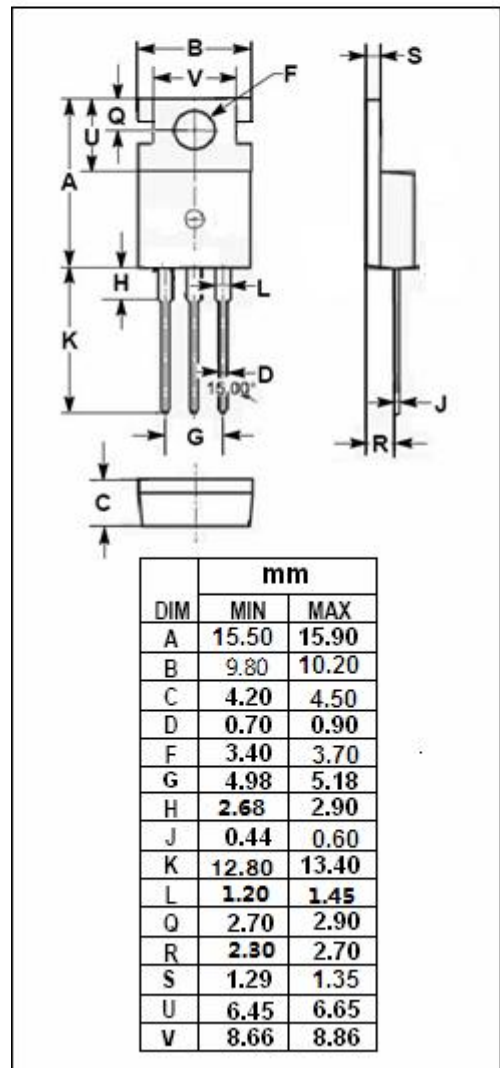
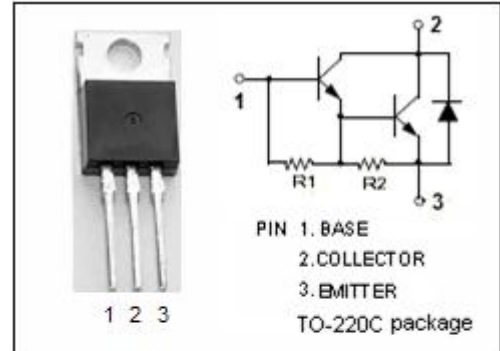
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 400V(\text{Min})$
- High DC Current Gain
: $h_{FE} = 500(\text{Min}) @ I_C = 4A$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Solenoid/ relay drivers
- Motor control
- Electronic automotive ignition

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	400	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current-Continuous	6	A
I_{CM}	Collector Current-Peak	10	A
P_C	Collector Power Dissipation @ $T_C = 25^\circ\text{C}$	50	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

 T_c=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 5mA; I _C = 0	6			V
V _{(BR)CBO}	Collector - Base Breakdown Voltage	I _C = 0.1mA; I _E = 0	400			V
V _{CEQ(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA; I _B = 0	400			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 6A; I _B = 60mA			1.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 6A; I _B = 60mA			2.0	V
I _{CEO}	Collector Cutoff Current	V _{CB} = 400V; R _{be} = ∞			0.1	mA
h _{FE}	DC Current Gain	I _C = 4A; V _{CE} = 2V	500			

Switching Times

t _{on}	Turn-On Time	I _C = 6A; I _{B1} = I _{B2} = 60mA;		2.0		μ s
T _{off}	Turn-Off Time			23		μ s

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