

isc Silicon NPN Darlington Power Transistor

2SD1170

DESCRIPTION

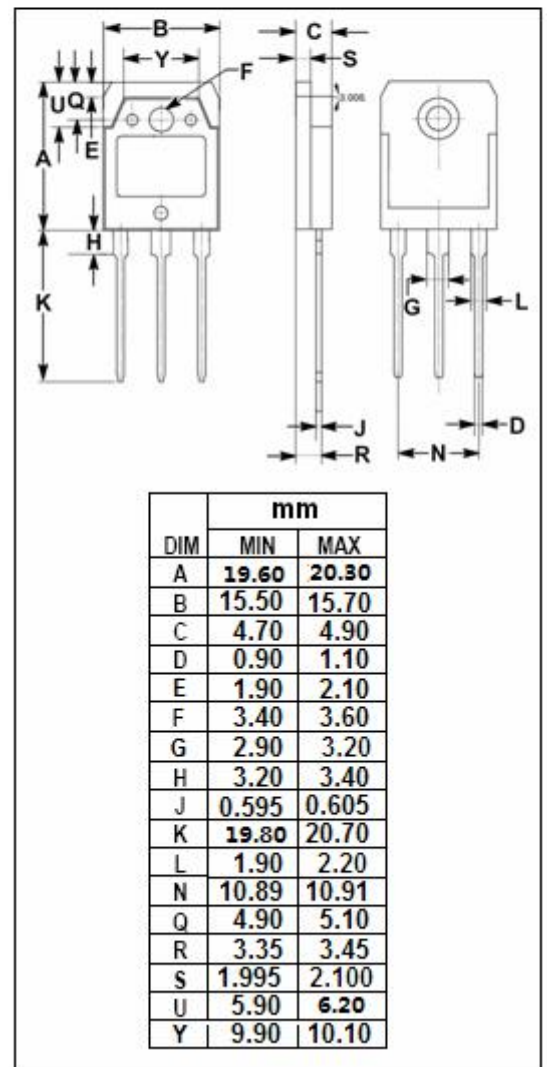
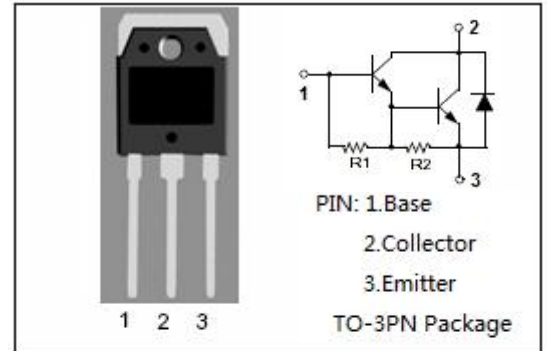
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 120V(\text{Min.})$
- Low Collector Saturation Voltage
- High DC Current Gain
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Driver for solenoid, motor and general purpose applications

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	120	V
V_{CEO}	Collector-Emitter Voltage	120	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current-Continuous	6	A
I_{CM}	Collector Current-Peak	10	A
I_B	Base Current-Continuous	1	A
P_C	Collector Power Dissipation @ $T_C=25^\circ\text{C}$	70	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**2SD1170****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C =10mA, I _B =0	120			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E = 3mA; I _C = 0	6			V
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C = 3A; I _B = 3mA			1.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 3A; I _B = 3mA			2.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} = 120V; I _E = 0			0.1	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 6V; I _C =0			3	mA
h _{FE}	DC Current Gain	I _C = 3A; V _{CE} = 2V	2000			
f _T	Current-Gain—Bandwidth Product	I _C = 1A; V _{CE} = 12V		50		MHz
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f _{test} = 1MHz		70		pF

Switching Times

t _{on}	Turn-On Time	I _C = 3A, I _{B1} = I _{B2} = 3mA; R _L = 10 Ω; V _{CC} = 30V		0.5		μ s
t _{stg}	Storage Time			5.5		μ s
t _f	Fall Time			1.5		μ s

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