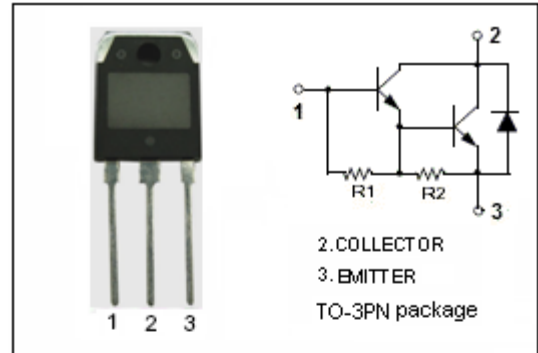


isc Silicon NPN Darlington Power Transistor

2SD1170

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 120V(\text{Min})$
- High DC Current Gain-
: $h_{FE} = 2000(\text{Min.}) @ (I_C = 3A, V_{CE} = 2V)$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 1.5V(\text{Max}) @ (I_C = 3A, I_B = 3mA)$

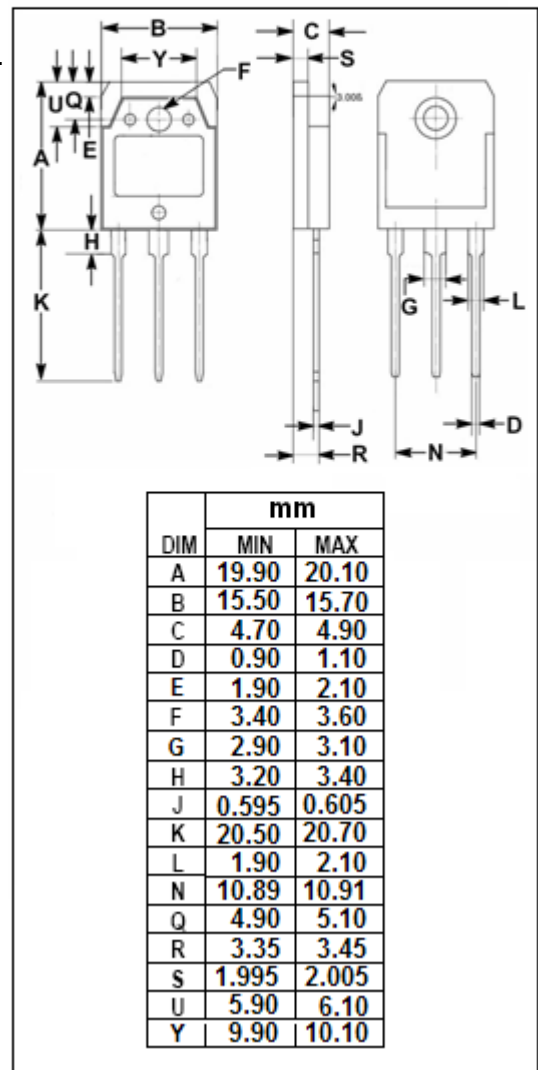


APPLICATIONS

- 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 @ $T_C=25^\circ\text{C}$	50	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~150	$^\circ\text{C}$



isc Silicon NPN Darlington Power Transistor**2SD1170****ELECTRICAL CHARACTERISTICS****T_j=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 _{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			10	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 6V; I _C = 0			10	μ A
h _{FE}	DC Current Gain	I _C = 3A; V _{CE} = 2V	2000			
C _{OB}	Output Capacitance	I _E = 0; V _{CB} = 10V; f _{test} = 1MHz		70		pF
f _T	Current-Gain—Bandwidth Product	I _E = -1A; V _{CE} = 12V		50		MHz

Switching Times

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