

isc Silicon NPN Darlington Power Transistor

2STW100

DESCRIPTION

- With TO-3PN packaging
- Very high DC current gain
- Monolithic darlington transistor with integrated antiparallel collector-emitter diode
- Complement to Type 2STW200
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

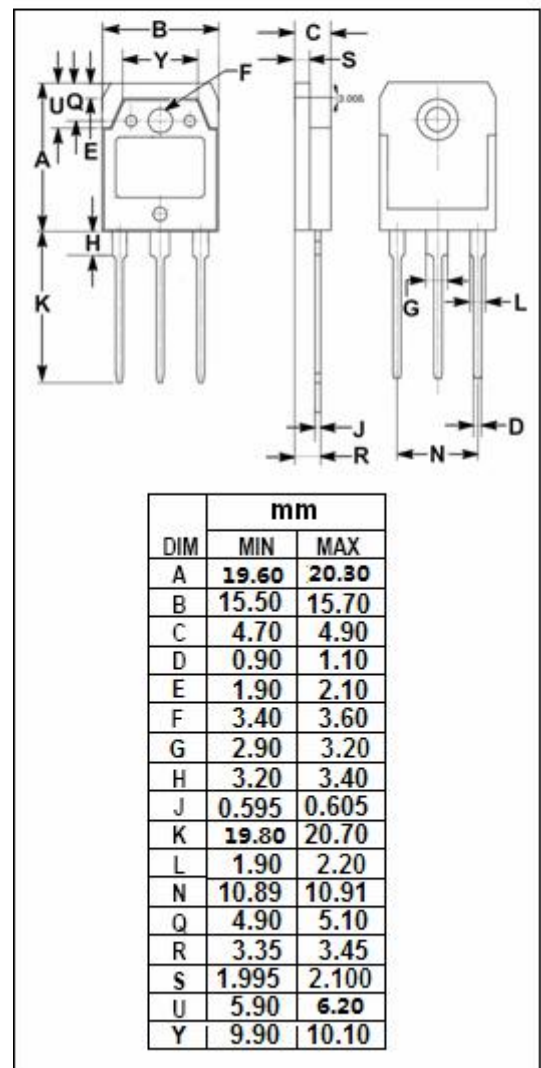
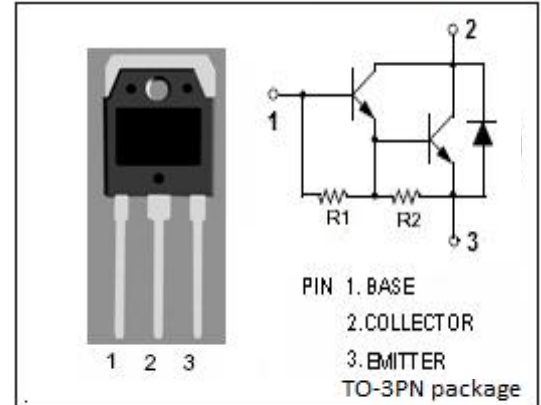
- AC-DC motor control
- Electronic ignition
- Alternator regulator

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

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current-Continuous	25	A
I_{CM}	Collector Current-Peak	40	A
I_B	Base Current- Continuous	6	A
P_C	Collector Power Dissipation	130	W
T_j	Max.Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature Range	-65~150	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance,Junction to Case	0.96	$^{\circ}\text{C/W}$
$R_{th\ j-a}$	Thermal Resistance,Junction to Ambient	62.5	$^{\circ}\text{C/W}$



isc Silicon NPN Darlington Power Transistor**2STW100****ELECTRICAL CHARACTERISTICS****T_c=25°C unless otherwise specified**

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V _{CEQ(SUS)}	Collector-Emitter Sustaining Voltage	I _C = 50mA, I _B = 0	80		V
V _{CE(sat)1}	Collector-Emitter Saturation Voltage	I _C = 5A, I _B = 20mA		1.2	V
V _{CE(sat)2}	Collector-Emitter Saturation Voltage	I _C = 10A, I _B = 40mA		1.75	V
V _{CE(sat)3}	Collector-Emitter Saturation Voltage	I _C = 20A, I _B = 80mA		3.5	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C = 20A, I _B = 80mA		3.3	V
V _{BE(on)}	Base-Emitter On Voltage	I _C = 10A ; V _{CE} = 3V		3.0	V
I _{CBO}	Collector Cutoff Current	V _{CB} =80V, I _E = 0		50	μ A
I _{CEO}	Collector Cutoff Current	V _{CE} = 80V, I _B = 0		50	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = 5V; I _C = 0		2	mA
h _{FE-1}	DC Current Gain	I _C = 5A ; V _{CE} = 3V	600	15000	
h _{FE-2}	DC Current Gain	I _C = 10A ; V _{CE} = 3V	500	12000	
h _{FE-3}	DC Current Gain	I _C = 20A ; V _{CE} = 3V	300	6000	

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