

SILICON POWER TRANSISTOR

2SD1162 (V443)

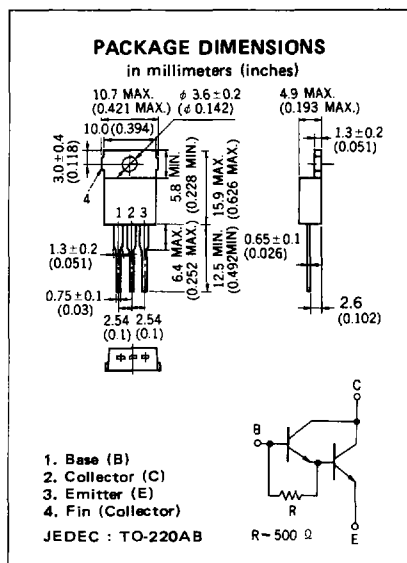
HIGH VOLTAGE HIGH CURRENT SWITCHING

NPN SILICON TRIPLE DIFFUSED DARLINGTON TRANSISTOR

Industrial Use

DESCRIPTION

Suitable for transistor ignitor and motor driver applications.



FEATURES

- High voltage switching.
- Low collector saturation voltage.

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Currents ($T_a = 25^\circ\text{C}$)

Collector to Emitter Voltage	V_{CBO}, V_{CES}	500	V
Collector to Emitter Sustaining Voltage	$V_{CEO(SUS)}$	300	V
Collector to Emitter Sustaining Voltage	$V_{CEX(SUS)}$	300	V
Emitter to Base Voltage	V_{EBO}	10	V
Continuous Collector Current	$I_C(DC)$	5	A
Peak Collector Current	$I_C(pulse)^*$	10	A
Continuous Base Current	$I_B(DC)$	0.5	A

Maximum Power Dissipations

Total Power Dissipation	$P_T(T_c = 25^\circ\text{C})$	50	W
Total Power Dissipation	$P_T(T_a = 25^\circ\text{C})$	1.85	W

Maximum Temperatures

Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$
Lead Temperature			
3.18 mm (1/8 inch) from case for 10 s.	T_L	260	$^\circ\text{C}$

Thermal Resistances

Junction to Case	$R_{th(j-c)}$	2.5	$^\circ\text{C/W}$
Junction to Ambient	$R_{th(j-a)}$	67.6	$^\circ\text{C/W}$

*Pulsed PW ≤ 1 ms, duty cycle $\leq 10\%$

ELECTRICAL CHARACTERISTICS (Ta = 25 °C unless otherwise noted.)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector to Emitter Sustaining Voltage	V _{CEO(SUS)}	300			V	I _C = 1.5 A, L = 10 mH
Collector Cutoff Current	I _{CBO1}			10	μA	V _{CB} = 400 V, I _E = 0
	I _{CBO2}			1.0	mA	V _{CB} = 400 V, I _E = 0, Ta = 125 °C
Emitter to Collector Voltage	V _{ECO}	10			V	I _C = 1 mA
DC Current Gain	h _{FE1}	400	1000	3000		V _{CE} = 2.0 V, I _C = 2 A *
	h _{FE2}	100				V _{CE} = 2.0 V, I _C = 3 A *
Collector Saturation Voltage	V _{CE(sat)}			1.5	V	I _C = 2 A, I _B = 5 mA *
Base Saturation Voltage	V _{BE(sat)}			2.0	V	
Turn On Time	t _{on}		1.0		μs	I _C = 3 A, I _{B1} = -I _{B2} = 30 mA V _{CC} = 150 V, R _L = 50 Ω
Storage Time	t _{stg}		12		μs	
Fall Time	t _f		6		μs	

* Pulsed PW ≤ 350 μs, duty cycle ≤ 2 %