



Solid State Devices Incorporated
 14830 Valley View Avenue
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 Telephone (213) 921-9660
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SPT 5130

50 AMP NPN

POWER SWITCHING TRANSISTOR

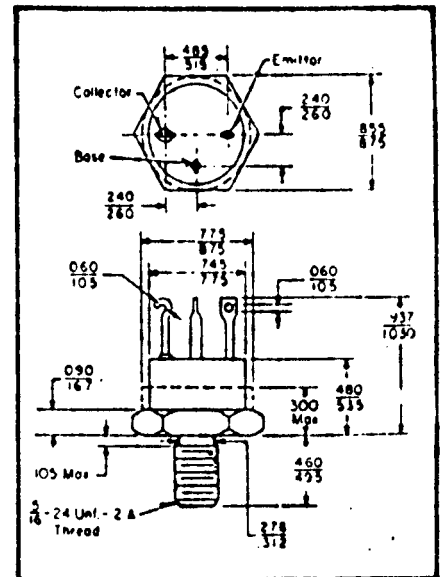
X00215

- FEATURES**
- * IC.....50 Amps
 - * Fast Switching 500 ns max.
 - * Popular TO-63 case

MAXIMUM RATINGS

Rating	Symbol	Max.	Unit
Collector-Emitter Voltage	V_{CE0}	100	Vdc
Collector-Base Voltage	V_{CB}	120	Vdc
Emitter-Base Voltage	V_{EB}	6	Vdc
Collector Current - Continuous	I_C	50	Adc
Base Current	I_B	20	Adc
Total Device Dissipation @ $T_C = 25^\circ C$	P_D	250	Watts
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	$^\circ C$

Jedec TO-63 case



THERMAL CHARACTERISTICS

Characteristic	Symbol	Max.	Unit
Thermal Resistance, Junction to Case	θ_{JC}	0.7	$^\circ C/W$

ELECTRICAL CHARACTERISTICS

Characteristic	Fig. No.	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage* ($I_C = 50 \text{ mAdc}, I_B = 0$)		$BV_{CE0(sus)}^*$	100		Vdc
Collector Cutoff Current ($V_{CE} = 50 \text{ Vdc}, I_B = 0$)		I_{CE0}		50	μAdc
Collector Cutoff Current ($V_{CE} = 100 \text{ Vdc}, V_{EB(off)} = 1.5 \text{ Vdc}$)		I_{CEX}		50	μAdc
Collector Cutoff Current ($V_{CB} = \text{Rated } V_{CB}, I_E = 0$)		I_{CBO}		10	μAdc
Emitter Cutoff Current ($V_{BE} = 6 \text{ Vdc}, I_C = 0$)		I_{EBO}		100	μAdc

ELECTRICAL CHARACTERISTICS

Characteristic	Fig. No.	Symbol	Min	Max	Unit
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ON CHARACTERISTICS

DC Current Gain*		h_{FE}^*			
($I_C = 40 \text{ Adc}, V_{CE} = 4 \text{ Vdc}$)			10		
($I_C = 20 \text{ Adc}, V_{CE} = 4 \text{ Vdc}$)			30		
Collector-Emitter Saturation Voltage*		$V_{CE(Sat)}^*$		1.0	Vdc
($I_C = 20 \text{ Adc}, I_B = 2 \text{ Adc}$)					
Base-Emitter Saturation Voltage*		$V_{BE(Sat)}^*$		1.2	Vdc
($I_C = 20 \text{ Adc}, I_B = 2 \text{ Adc}$)					

DYNAMIC CHARACTERISTICS

Current-Gain-Bandwidth Product		f_T			MHz
($I_C = 1.0 \text{ Adc}, V_{CE} = 10 \text{ Vdc}, f = 10 \text{ MHz}$)			30		
Output Capacitance		C_{ob}		600	pF
($V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 0.1 \text{ MHz}$)					

SWITCHING CHARACTERISTICS

Delay Time	$(V_{CC} = 30 \text{ Vdc}, I_C = 15 \text{ Adc}, I_{B1} = 1.2 \text{ mA dc})$	t_{on}	$t_d + t_r$		500	ns
Rise Time						
Storage Time	$(V_{CC} = 30 \text{ Vdc}, I_C = 15 \text{ Adc}, I_{B1} = I_{B2} = 1.2 \text{ mA dc})$	t_{off}	$t_s + t_f$		2	μs
Fall Time						

*Pulse Test: Pulse Width 300 μs , Duty Cycle = 2 %

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