



Solid State Devices, Inc.

14830 Valley View Blvd * La Mirada, Ca 90638

Phone: (562) 404-7855 * Fax: (562) 404-1773

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SPT35P3

**4 AMPS
60 VOLTS
DUAL NPN DARLINGTON
TRANSISTOR**

Designer's Data Sheet

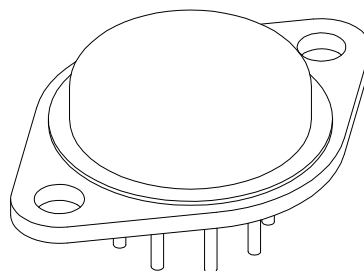
FEATURES:

- Cost-Saving Monolithic Design with Associated Commutating Diodes in A Single Package: Reduced Size, Improved Efficiency
- High Current Gain
- Low Saturation Voltage
- High Energy Capability
- Electrically Isolated Case
- Hermetically Sealed 8 Pin TO-3 Package
- High Current Replacement for PIC6006
- TX, TXV, and S-Level Screening Available. Consult Factory.

APPLICATIONS:

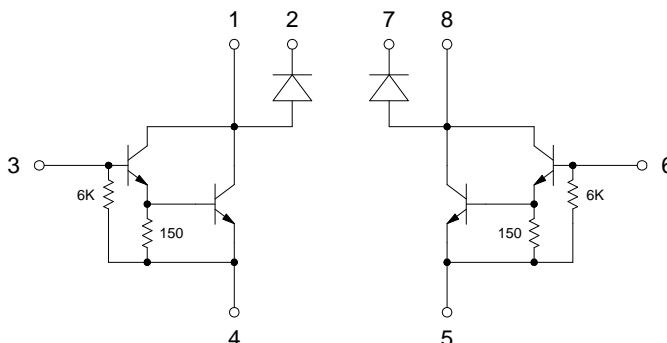
- Full Wave Bridge Circuits for Converters and Stepper-Motor Drives

TO-3, 8 Leads



MAXIMUM RATINGS		Symbol	Value	Units
Collector – Emitter Voltage		V_{CE0}	60	Volts
Collector – Base Voltage		V_{CB0}	60	Volts
Collector Current	Continuous	I_C	4	Amps
	Peak	I_{CM}	8	Amps
Base Current		I_B	0.2	Amps
Diode Average Forward Current		I_O	2	Amps
Total Device Dissipation	@ $T_C = 25^\circ C$ Per Darlington	P_D	60 30	Watts
Operating and Storage Temperature		T_J & T_{stg}	-65 to +175	$^\circ C$
Thermal Resistance, Junction to Case	Per Device	R_{qJC}	2.5	$^\circ C/W$
	Per Transistor		5.0	

SCHEMATIC



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: TR0080D

DOC



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ELECTRICAL CHARACTERISTICS (Per Darlington)		Symbol	Min	Max	Unit
Collector – Emitter Sustaining Voltage * (Each Darlington)	$I_C = 10 \text{ mA}$	BV_{CEO}	60	—	Volts
Collector – Base Breakdown Voltage *	$I_C = 1 \text{ mA}$	BV_{CBO}	60	—	Volts
Collector Cutoff Current ($V_{CE} = 40 \text{ V}$)	$T_C = 25^\circ\text{C}$ $T_C = 150^\circ\text{C}$	I_{CEO}	— —	0.1 200	mA
Emitter Cutoff Current ($V_{BE} = 5 \text{ V}$)		I_{EBO}		1.5	mA
DC Current Gain * ($V_{CE} = 5 \text{ V}$)	$I_C = 2 \text{ A}, T_A = 25^\circ\text{C}$ $I_C = 0.4 \text{ A}, T_A = -55^\circ\text{C}$	h_{FE}	2000 100	— —	
Collector – Emitter Saturation Voltage *	$I_C = 2 \text{ A}, I_B = 4 \text{ mA}$	$V_{CE(SAT)}$	—	1.5	Volts
Base – Emitter Saturation Voltage *	$I_C = 2 \text{ A}, I_B = 4 \text{ mA}$	$V_{BE(SAT)}$	—	2.0	Volts

Commutating Diodes (Per Darlington)		Symbol	Min	Max	Unit
Break Down Voltage	$I_R = 100 \mu\text{A}$	BV_R	60	—	Volts
Reverse Leakage Current	$V_R = 40 \text{ V}$ $V_R = 40 \text{ V}, T_C = 100^\circ\text{C}$	I_{R1} I_{R2}	— —	0.5 500	mA mA
Forward Voltage Drop	$I_F = 2 \text{ A}$	V_F	—	1.5	Volts
Reverse Recovery Time	$I_F = 0.5 \text{ A}, I_R = 0.5 \text{ A},$ $I_{RR} = 0.25 \text{ A}$	t_{RR}	—	2	ms

• Pulse Test: Pulse Width = 300 μsec max, Duty Cycle = 2% max

