SOLID STATE DEVICES, INC.
14830 Valley View Blvd * La Mirada, Ca 90638
Phone: (562) 404-7855 * Fax: (562) 404-1773

SPT6060/3

DESIGNER'S DATA SHEET

20 AMP 350 VOLTS NPN DARLINGTON TRANSISTOR

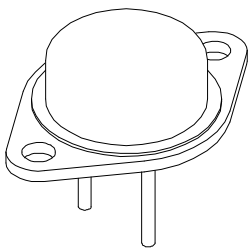
FEATURES:

- **High Voltage Rating - 350V Sustaining**
- **Fast Switching Capabilities / Fast Turn-off Time**
- **Thermally Stable Structure for Reliability in Power Cycling**
- **Overload Short Circuit Rating**

APPLICATIONS:

- **High Voltage Switching Power Supplies**
- **Inverter / Regulators**
- **Deflection Circuits**
- **Pulse-Width-Modulated (PWM) System Control Circuits**

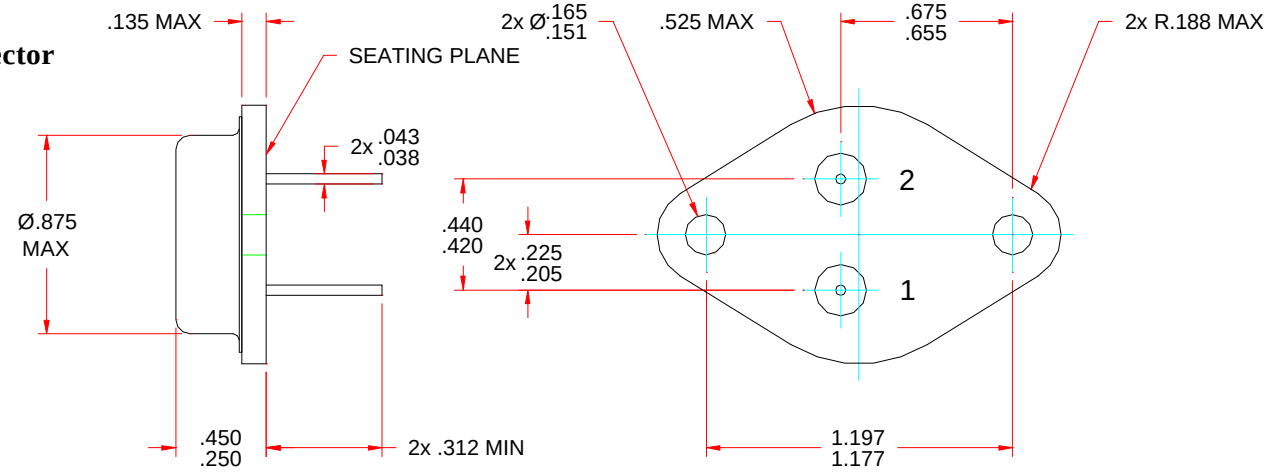
TO-3



MAXIMUM RATINGS		SYMBOL	VALUE	UNITS
Collector-Emitter Voltage		V_{CEO}	350	Volts
Collector-Base Voltage		V_{CBO}	350	Volts
Collector Current	Continuous Peak	I_C I_{CM}	20 40	Amps
Base Current	Continuous Peak	I_B I_{BM}	4 6	Amps
Total Device Dissipation Derate above 25°C	@ T_C = 25°C	P_D	125 1	W W/°C
Operating and Storage Temperature		T_J, T_{STG}	-65 to +150	°C
Thermal Resistance, Junction to Case		R_{qJC}	1	°C/W

CASE OUTLINE: TO-3

Pin Out:
Case - Collector
1 - Base
2 - Emmiter



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

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ELECTRICAL CHARACTERISTICS		SYMBOL	MIN	MAX	UNITS
Collector-Emitter Sustaining Voltage (I_C = 2A, L = 2mH)		$V_{CEO(sus)}$	300	-	V_{DC}
Collector Cutoff Current (V_{CE} = Rated Value, T_C = 25°C)		I_{CEO}	-	1.0	mA_{DC}
Emitter Cutoff Current (V_{EB} = 4V_{DC}, I_C = 0)		I_{EBO}	-	300	mA_{DC}
Overload Short Circuit Rating ($V_{CEO(sus)}$ = 300V, I_C = 30A, I_B = 300mA, Time = 10 : s)			90	-	mJ
Forward Bias Safe Operating Area	V_{CE} = 6.25V, t = 1sec V_{CE} = 12.5V, t = 1sec V_{CE} = 300V, t = 1sec	FBSOA	20 10 0.125	- - -	A
DC Current Gain* (V_{CE} = 5V_{DC})	I_C = 10A_{DC} I_C = 15A_{DC} I_C = 20A_{DC}	H_{FE}	30 20 15	120 80 60	
Collector-Emitter Saturation Voltage*	I_C = 10A_{DC}, I_B = 2A_{DC} I_C = 10A_{DC}, I_B = 1A_{DC} I_C = 20A_{DC}, I_B = 2A_{DC}	$V_{CE(SAT)}$		1.4 1.5 2.0	V_{DC}
Base-Emitter Saturation Voltage*	I_C = 10A_{DC}, I_B = 2A_{DC} I_C = 20A_{DC}, I_B = 2A_{DC}	$V_{BE\ (SAT)}$	- -	2.5 3.0	V_{DC}
Small Signal Current Gain (I_C = 1A_{DC}, V_{CE} = 10V_{DC}, f = 1MHz)		h_{FE}	10		
Rise Time	V_{CC} = 150V_{DC}, I_C = 10A_{DC}, I_{B1} = I_{B2} = 1.0A_{DC}, t_P = 4µs min.	t_r	-	0.4	ms
Storage Time		t_s	-	2.5	ms
Fall Time		t_f	-	1.0	ms

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

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