



SOLID STATE DEVICES, INC.

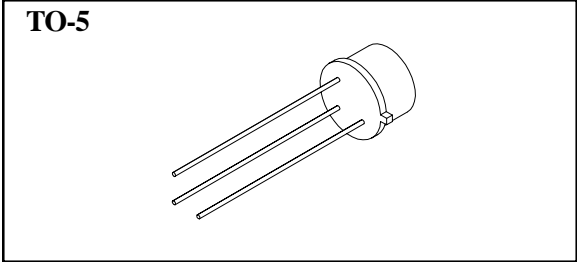
14830 Valley View Blvd * La Mirada, Ca 90638
 Phone: (562) 404-7855 * Fax: (562) 404-1773
 ssdi@ssdi-power.com * www.ssdi-power.com

DESIGNER'S DATA SHEET

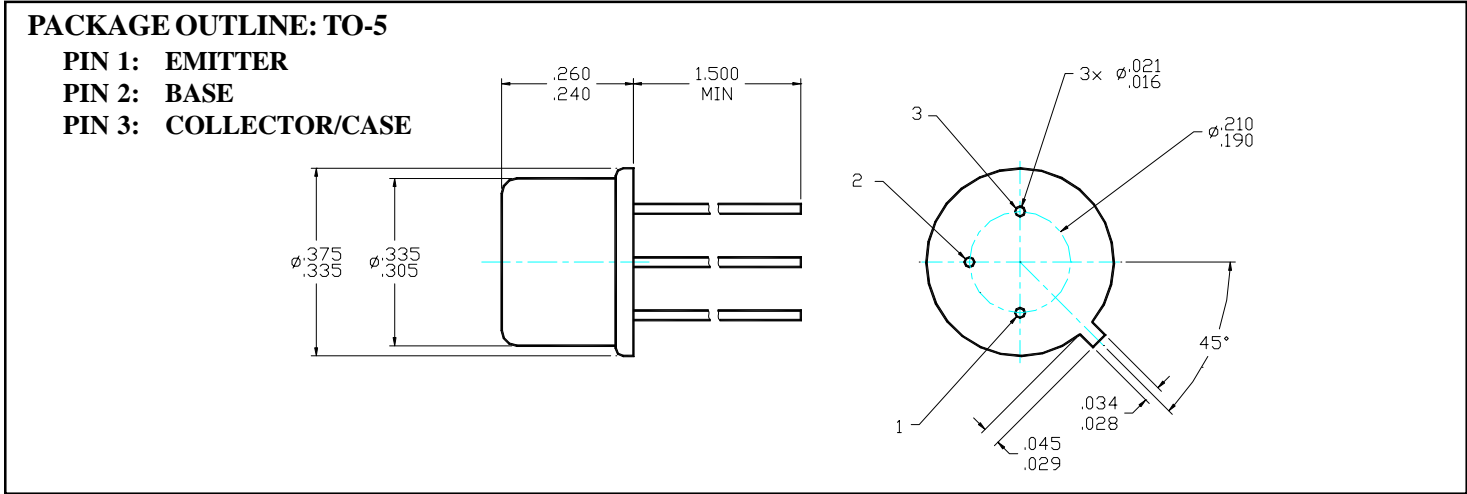
**SPT5502
SPT5503**

**1 AMP
HIGH VOLTAGE / HIGH SPEED
NPN TRANSISTOR**

- FEATURES:**
- BVCBO to 800V
 - Fast Switching: $t_D = 100\text{ns max.}$
 - Good Safe Operating Area
 - Linear Gain from 50mA to 1.0 A.
 - TX, TXV and Space Level screening available



MAXIMUM RATINGS	SYMBOL	SPT5502	SPT5503	UNIT
Collector - Emitter Voltage	V_{CER}	700	800	V
Collector - Base Voltage	V_{CB}	700	800	V
Emitter - Base Voltage	V_{EB}	10		V
Collector Current	I_C	1.0		A
Base Current Current	I_B	0.5		A
Total Device Dissipation Derate above $T_C = 25^\circ\text{C}$	P_D	6.0 34.3		W mW/°C
Operating and Storage Temperature	$T_{OP} \& T_{STG}$	-65 to +200		°C
Thermal Resistance	$R_{\theta JC}$	29		°C/W



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

DATA SHEET #: TR0026B

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ELECTRICAL CHARACTERISTICS ^{1/}		SYMBOL	MIN	MAX	UNITS
Collector-Emitter Breakdown Voltage ($I_C = 200\mu A, I_B = 0A, R_{BE} = 1k\Omega$)	SPT5502 SPT5503	BV_{CER}	700 800	- -	V _{DC}
Collector Cutoff Current ($I_B = 0A_{DC}$)	$V_{CE} = 300V_{DC}$ $V_{CE} = 400V_{DC}$	I_{CEO}	- -	10 10	μA_{DC}
Collector Cutoff Current ($V_{CE} = \text{Rated } V_{CE}, V_{EB(off)} = 1.5V_{DC}$)	$T_C = 25^\circ C$ $T_C = 100^\circ C$	I_{CEX}	- -	50 1.0	μA_{DC} mA _{DC}
Collector Cutoff Current ($V_{CB} = \text{Rated } V_{CB}, I_E = 0A_{DC}$)		I_{CBO}	-	100	μA_{DC}
Emitter Cutoff Current ($V_{BE} = 10V_{DC}, I_C = 0A_{DC}$)		I_{EBO}	-	50	μA_{DC}
DC Current Gain* ($V_{CE} = 5V_{DC}$)	$I_C = 50mA_{DC}$ $I_C = 0.5A_{DC}$ $I_C = 1A_{DC}$	H_{FE}	15 10 5	- 90 50	
Collector-Emitter Saturation Voltage *	$I_C = 0.5A_{DC}, I_B = 0.1A_{DC}$ $I_C = 1A_{DC}, I_B = 0.25A_{DC}$	$V_{CE(SAT)}$	- -	0.5 1.0	V _{DC}
Base-Emitter Saturation Voltage *	$I_C = 0.5A_{DC}, I_B = 0.1A_{DC}$ $I_C = 1A_{DC}, I_B = 0.25A_{DC}$	$V_{BE(SAT)}$	-	1.0 1.2	V _{DC}
Current Gain Bandwidth Product ($I_C = 100mA_{DC}, V_{CE} = 10V_{DC}, f = 1MHz$)		f_T	8	-	MHz
Output Capacitance ($V_{CB} = 20V_{DC}, I_E = 0, f = 1MHz$)		C_{ob}	-	35	pF
Second Breakdown Collector Current With Base Forward Biased ($V_{CE} = 200V, t = 1sec$ (Non-Repetitive))		$I_{S/B}$	50	-	mA _{DC}
Delay Time	$V_{CC} = 125V_{DC}, I_C = 1A_{DC}, I_{B1} = 200mA_{DC}$	t_d	-	100	nsec
Rise Time		t_r	-	700	nsec
Storage Time	$V_{CC} = 125V_{DC}, I_C = 1A_{DC}, I_{B1} = I_{B2} = 200mA_{DC}$	t_s	-	3	μsec
Fall Time		t_f	-	700	nsec

For thermal derating curves and other characteristic curves please contact SSDI Marketing Department.

NOTES:

^{1/} Unless Otherwise Specified $T_A = 25^\circ C$

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