SOLID STATE DEVICES, INC.
14830 Valley View Blvd * La Mirada, Ca 90638
Phone: (562) 404-7855 * Fax: (562) 404-1773
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SPT5502
SPT5503

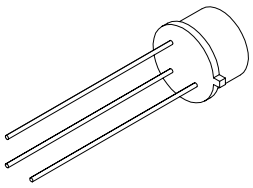
DESIGNER'S DATA SHEET

1 AMP
HIGH VOLTAGE / HIGH SPEED
NPN TRANSISTOR

FEATURES:

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

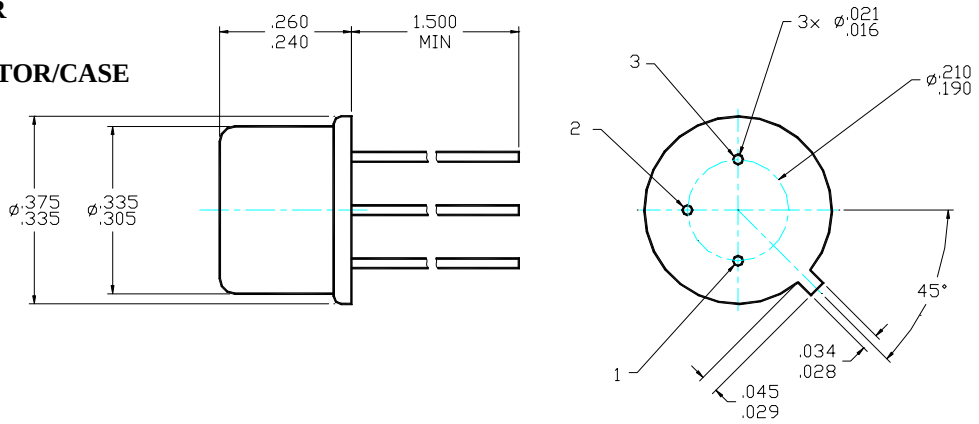
TO-5



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 T_C = 25°C Derate above T_C = 25°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

PACKAGE OUTLINE: TO-5

PIN 1: EMITTER
PIN 2: BASE
PIN 3: COLLECTOR/CASE



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

SPT5502
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ELECTRICAL CHARACTERISTICS 1/		SYMBOL	MIN	MAX	UNITS
Collector-Emitter Breakdown Voltage (I_C = 200µA, I_B = 0A, R_{BE} = 1kΩ)	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} = Rated V_{CE}, $V_{EB(off)}$ = 1.5V_{DC})	T_C = 25°C T_C = 100°C	I_{CEX}	- -	**50** **1.0**	μA_{DC} mA_{DC}
Collector Cutoff Current (V_{CB} = 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°C

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