Solid State Devices, Inc.
14830 Valley View Blvd * La Mirada, Ca 90638
Phone: (562) 404-7855 * Fax: (562) 404-1773
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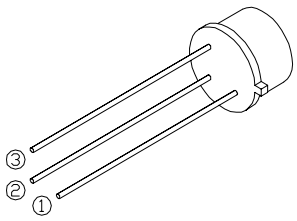
2N5013 thru 2N5015

0.5 AMP
800 – 1000 Volts
NPN Transistor

DESIGNER'S DATA SHEET

FEATURES:

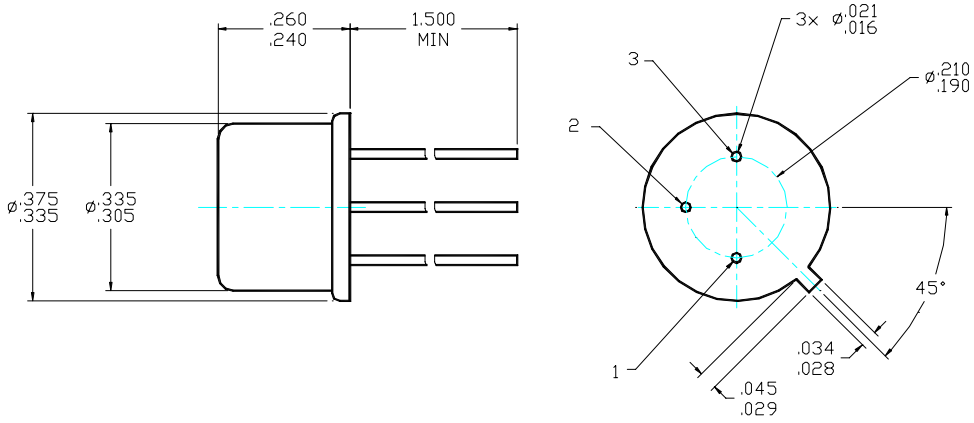
- BVCER and BVCEO to 1000 volts
- Low Saturation Voltage
- Low Leakage at High Temperature
- High Gain, Low Saturation
- 200° C Operating, Gold Eutectic Die Attach
- 2N5010 thru 2N5012 Also Available, Contact Factory
- TX, TXV, and S-Level Screening Available



Maximum Ratings		Symbol	Value	Units
Collector – Emitter Voltage (RBE = 1KΩ)	2N5013 2N5014 2N5015	V_{CER}	800 900 1000	V
Collector – Base Voltage	2N5013 2N5014 2N5015	V_{CBO}	800 900 1000	V
Emitter – Base Voltage		V_{EBO}	5	V
Peak Collector Current		I_C	0.5	A
Peak Base Current		I_B	50	mA
Total Device Dissipation @ TC = 100º C Derate above 100º C		P_D	2.0 20	W mW/ºC
Operating and Storage Temperature		**Tj, Tstg**	-65 to +200	ºC
Thermal Resistance, Junction to Case		$R_{\theta JC}$	50	ºC/W

CASE OUTLINE: TO-5

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



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	DATA SHEET #: TR0043A	DOC

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2N5013 thru 2N5015

Electrical Characteristic [1/]		Symbol	Min	Max	Units
Collector – Emitter Breakdown Voltage (I_C = 200μA_{DC}, R_{BE} = 1KΩ)	2N5013 2N5014 2N5015	**BV_{CER}**	800 900 1000	—	V
Collector–Base Breakdown Voltage (I_C = 200μA_{DC})	2N5013 2N5014 2N5015	**BV_{CBO}**	800 900 1000	—	V
Emitter–Base Breakdown Voltage (I_E = 50μA_{DC})		**BV_{EBO}**	5	—	V
Collector Cutoff Current (T_C = 100°)	V_{CB} = 650V (2N5013) V_{CB} = 700V (2N5014) V_{CB} = 750V (2N5015) V_{CB} = 650V (2N5013) V_{CB} = 700V (2N5014) V_{CB} = 750V (2N5015)	**I_{CBO}**	— — — — — —	12 12 12 100 100 100	μAdc
DC Current Gain [2/] (I_C = 5mA_{DC}, V_{CE} = 10V_{DC}) (I_C = 20mA_{DC}, V_{CE} = 10V_{DC})		**h_{FE}**	10 30	 180	—
Collector – Emitter Saturation Voltage [2/] (I_C = 20mA_{DC}, I_B = 5mA_{DC})	2N5013 2N5014 2N5015	**$V_{CE(Sat)}$**	— —	1.6 1.6 1.8	Vdc
Base – Emitter Saturation Voltage [2/] (I_C = 20mA_{DC}, I_B = 5mA_{DC})		**$V_{BE(Sat)}$**	—	1.0	Vdc
Current Gain Bandwidth Product (I_C = 20mA_{DC}, V_{CE} = 10V_{DC}, f = 1 – 20MHz)		**f_T**	20	—	MHz
Output Capacitance (V_{CB} = 10V_{DC}, I_E = 0A_{DC}, f = 1.0MHz)		**Cob**	—	30	pF
Delay Time	V_{CC} = 125V_{DC}, I_C = 100mA_{DC}, I_{B1} = 20mA_{DC}, I_{B2} = 20mA_{DC}	**td**	—	200	nsec
Rise Time		**tr**	—	1200	nsec
Storage Time		**ts**	—	3.0	μsec
Fall Time		**tf**	—	800	nsec

NOTES:

1/ Unless Otherwise Specified: All Tests @25ºC

2/ Pulse Test: Pulse Width = 300 μS, Duty Cycle = 2%

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