Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-7855 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

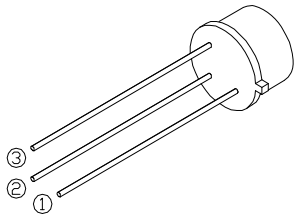
2N5013 thru 2N5015

0.5 AMP
800 – 1000 Volts
NPN Transistor

DESIGNER'S DATA SHEET

FEATURES:

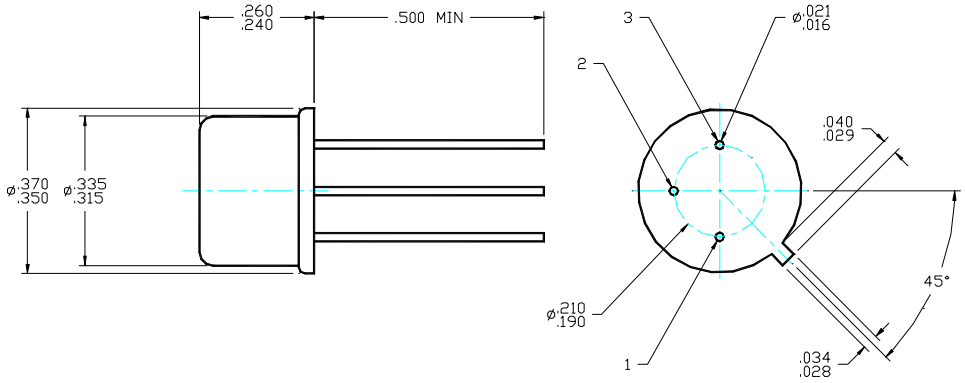
- BVCER to 1000 volts
- Low Saturation Voltage
- Low Leakage at High Temperature
- High Gain, Low Saturation
- 200° C Operating, Gold Eutectic Die Attach
- 2N5010 thru 2N5012 Also Available, Contact Factory
- TX, TXV, and S-Level Screening Available



Maximum Ratings		Symbol	Value	Units
Collector – Emitter Voltage (R_{BE}= 1 kΩ)	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
Collector – Emitter Breakdown Voltage	2N5013 2N5014 2N5015	BV_{CEO}	300 400 500	V
Peak Collector Current		I_C	0.5	A
Peak Base Current		I_B	250	mA
Total Device Dissipation @ T_C = 100° C Derate above 100° C		P_D	2.0 20	W mW/°C
Operating and Storage Temperature		T_{OP}, T_{STG}	-65 to +200	°C
Thermal Resistance, Junction to Case		$R_{\theta JC}$	50	°C/W

CASE OUTLINE: TO-39

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 #: TR0043B | **DOC**

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2N5013 thru 2N5015

Electrical Characteristic [1/]		Symbol	Min	Max	Units
Collector – Emitter Breakdown Voltage (I_C = 200 μA_{DC}, R_{BE} = 1 KΩ)	2N5013 2N5014 2N5015	BV_{CER}	800 900 1000	—	V
Collector–Base Breakdown Voltage (I_C = 200 μA_{DC})	2N5013 2N5014 2N5015	BV_{CBO}	800 900 1000	—	V
Emitter–Base Breakdown Voltage (I_E = 50 μA_{DC})		BV_{EBO}	5	—	V
Collector Cutoff Current (V_{CB} = 650 V) (V_{CB} = 700 V) (V_{CB} = 760 V) (V_{CB} = 650 V, T_C = 100°C) (V_{CB} = 700 V, T_C = 100°C) (V_{CB} = 760 V, T_C = 100°C)	 2N5013 2N5014 2N5015 2N5013 2N5014 2N5015	I_{CBO}	 — — — — — —	 12 12 12 100 100 100	µAdc
Emitter Cutoff Current (V_{EB}= 4V)		I_{EBO}	—	20	µA
DC Current Gain [2/] (I_C = 5 mA_{DC}, V_{CE} = 10 V_{DC}) (I_C = 20 mA_{DC}, V_{CE} = 10 V_{DC})		h_{FE}	 10 30	 180	—
Collector – Emitter Saturation Voltage [2/] (I_C = 20 mA_{DC}, I_B = 5 mA_{DC})	2N5013 2N5014 2N5015	$V_{CE(Sat)}$	— — —	1.6 1.6 1.8	Vdc
Base – Emitter Saturation Voltage [2/] (I_C = 20 mA_{DC}, I_B = 5 mA_{DC})		$V_{BE(Sat)}$	—	1.0	Vdc
Current Gain Bandwidth Product (I_C = 20 mA_{DC}, V_{CE} = 10 V_{DC}, f = 1 – 20 MHz)		f_T	20	—	MHz
Output Capacitance (V_{CB} = 10 V_{DC}, I_E = 0 A_{DC}, f = 1.0 MHz)		Cob	—	30	pF
Delay Time **Rise Time** **Storage Time** **Fall Time**	V_{CC}= 125 V_{DC}, I_C= 100 mA_{DC}, I_{B1}= 20 mA_{DC}, I_{B2}= 20 mA_{DC}	td tr ts tf	— — — —	200 1200 3.0 800	nsec nsec µsec 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.