2N5013 THRU 2N5015
500 mA
HIGH VOLTAGE NPN TRANSISTOR
800—1000 VOLTS

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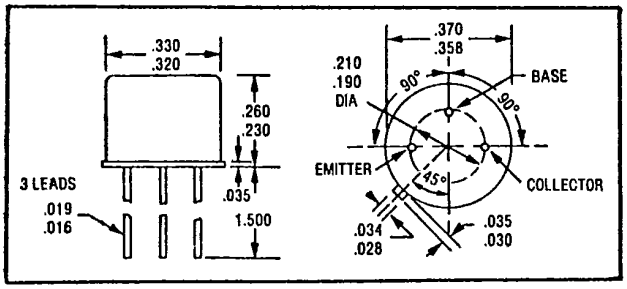
CASE STYLE W
JEDEC TO—5



FEATURES

- BVCER AND BVCBO TO 1000 VOLTS
- LOW SATURATION VOLTAGE
- LOW LEAKAGE AT HIGH TEMPERATURE
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH
- 2N5010 THRU 2N5012 ALSO AVAILABLE

MAXIMUM RATINGS

Rating		Symbol	Value	Unit
Collector - Emitter Voltage, R_{BE} = 1K Ohms	2N5013	V_{CER}	800	Volts
	2N5014		900	
Collector - Base Voltage	2N5015	V_{CBO}	1000	
Emitter - Base Voltage		V_{EBO}	5	Volts
Collector Current		I_C	500	m Amps
Base Current		I_B	50	m Amps
Total Device Dissipation @ TC = 100°C		P_D	2	Watts
Derate above 100 °C			20	mW/°C
Operating and Storage Temperature		Tj, Tstg	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	RθJC	50	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics		Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage*	2N5013		800		Vdc
	2N5014		900		
(I_C = 200 u Adc, R_{BE} = 1 K ohms)	2N5015	BV_{CER}*	1000		
Collector - Base Breakdown Voltage	2N5013		800		Vdc
	2N5014		900		
(I_C = 200 u Adc)	2N5015	BV_{CBO}	1000		
Emitter - Base Breakdown Voltage (I_E = 50 uAdc)		BV_{EBO}	5		Vdc

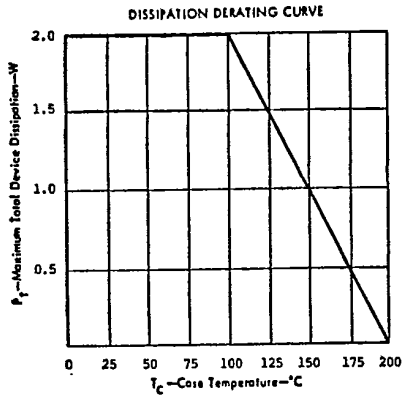
NOTE: All specifications subject to change without notice.

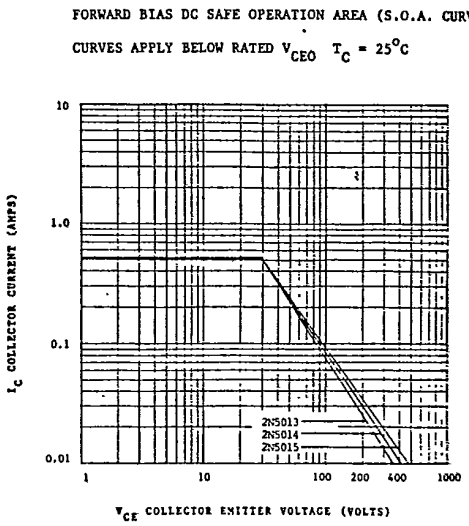
ELECTRICAL CHARACTERISTICS

Characteristics		Symbol	Min.	Max.	Unit
Collector Cutoff Current	(VCB = 650 Vdc) 2N5013 (VCB = 700 Vdc) 2N5014 (VCB = 750 Vdc) 2N5015	I_{CBO}		12**	uAdc
Collector Cutoff Current	(VCB = 650 Vdc, TA=100°C) 2N5013 (VCB = 700 Vdc, TA=100°C) 2N5014 (VCB = 750 Vdc, TA=100°C) 2N5015	I_{CBO}		100**	uAdc
DC Current Gain* (I_C = 5 mAdc, V_{CE} = 10 Vdc) (I_C = 20 mAdc, V_{CE} = 10 Vdc)		h_{FE}*	25 30	180	
Collector - Emitter Saturation Voltage* (I_C = 20 mAdc, I_B = 5 m Adc)	2N5013 2N5014 2N5015	$V_{CE\ (SAT)}$*		1.6 1.6 1.8	Vdc
Base - Emitter Saturation Voltage* (I_C = 20 mAdc, I_B = 5 m Adc)		$V_{BE\ (SAT)}$*		1.0	Vdc
Current - Gain - Bandwith Product (I_C = 20 mAdc, V_{CE} = 10 Vdc, f = 1 MHz)		f_T	25		MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 5 MHz)		C_{ob}		25	pf
Delay Time	(V_{CC} = 125 Vdc,	t_d		200	ns
Rise Time	I_C = 100 mAdc,	t_r		1200	ns
Storage Time		t_s*		3.0	us
Fall Time	$I_{B1} = I_{B2}$ = 10 mAdc)	t_f		800	ns

*Pulse Test: Pulse width = 300 us, DutyCycle = 2% **Typically 1 uA

TYPICAL OPERATING CURVES





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