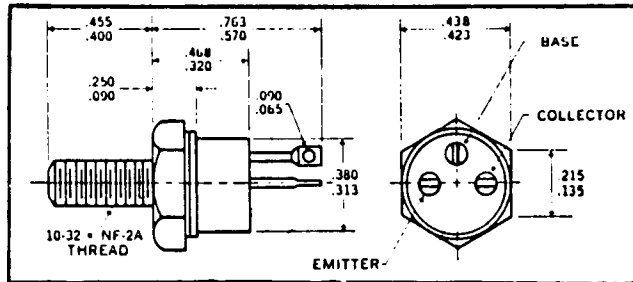


X60146

2N5003 AND 2N5005**5 AMP****HIGH SPEED PNP TRANSISTOR
100 VOLTS****SSDII**14830 Valley View Avenue
La Mirada, California 90638
(213) 921-9660
TWX 910-583-4807
FAX 213-921-2396**CASE STYLE X****JEDEC TO-59****ALL TERMINALS ISOLATED FROM CASE****FEATURES**

- RADIATION TOLERANT
- FAST SWITCHING, TYPICAL 200 NSEC t_{on}
- HIGH FREQUENCY, TYPICAL f_T 100 MHZ
- V_{CE0} 80 VOLTS MIN
- HIGH LINEAR GAIN, LOW SATURATION VOLTAGE
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH
- DESIGNED FOR COMPLEMENTARY USE WITH 2N5002 AND 2N5004

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CE0}	80	Volts
Collector - Base Voltage	V_{CBO}	100	Volts
Emitter - Base Voltage	V_{EBO}	6	Volts
Collector Current	I_C	5	Amps
Base Current	I_B	2	Amps
Total Device Dissipation @ $T_C = 50^\circ\text{C}$	P_D	50	Watts
Derate above 50 °C		333	mW/°C
Operating and Storage Temperature	T_j, T_{stg}	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.0	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* ($I_C = 100 \text{ mAdc}$)	BV_{CE0}	80		Vdc
Collector - Base Breakdown Voltage ($I_C = 200 \text{ u Adc}$)	BV_{CBO}	100		Vdc
Emitter - Base Breakdown Voltage ($I_E = 200 \text{ u Adc}$)	BV_{EBO}	6		Vdc

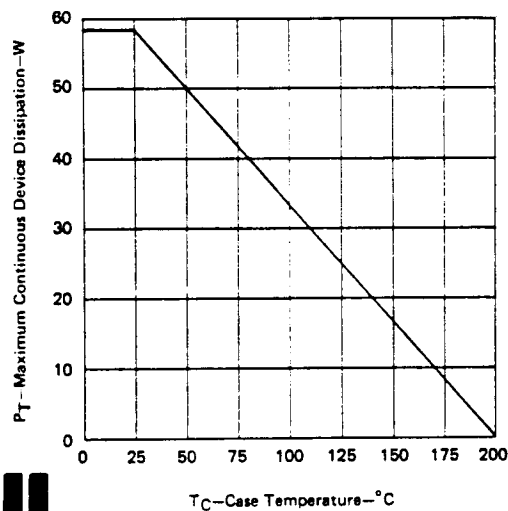
ELECTRICAL CHARACTERISTICS

Characteristics		Symbol	Min.	Max.	Unit
Collector Cutoff Current ($V_{CE} = 60 \text{ Vdc}$, $V_{BE} = 2 \text{ Vdc}$, $T_C = 150^\circ\text{C}$) ($V_{CE} = 40 \text{ Vdc}$)		I_{CEV} I_{CEO}		500 50	μAdc μAdc
Collector Cutoff Current ($V_{CE} = 60 \text{ Vdc}$) ($V_{CE} = 100 \text{ Vdc}$)		I_{CES}		1.0 1.0	μAdc mAdc
Emitter Cutoff Current ($V_{EB} = 5 \text{ Vdc}$) ($V_{EB} = 6 \text{ Vdc}$)		I_{EBO}		1.0 1.0	μAdc mAdc
DC Current Gain*					
$I_C = 50 \text{ mAdc}$, $V_{CE} = 5 \text{ Vdc}$	2N5003	h_{FE}	20	90	
	2N5005		50		
$I_C = 2.5 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$	2N5003		30		
	2N5005		70		
$I_C = 5 \text{ Adc}$, $V_{CE} = 5 \text{ Vdc}$	2N5003		20		
	2N5005	40			
Collector - Emitter Saturation Voltage*					
$I_C = 2.5 \text{ Adc}$, $I_B = 250 \text{ mAdc}$		$V_{CE(SAT)}$		0.75	Vdc
$I_C = 5 \text{ Adc}$, $I_B = 500 \text{ mAdc}$				1.5	
Base - Emitter Saturation Voltage*					
$I_C = 2.5 \text{ Adc}$, $I_B = 250 \text{ mAdc}$		$V_{BE(SAT)}$		1.45	Vdc
$I_C = 5 \text{ Adc}$, $I_B = 500 \text{ mAdc}$				2.2	
Current - Gain - Bandwidth Product ($I_C = 500 \text{ mAdc}$, $V_{CE} = 5 \text{ Vdc}$, $f = 20 \text{ MHz}$)		f_T	60 70		MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 1 \text{ MHz}$)		C_{ob}		250	pf
Base - Emitter Voltage* ($V_{CE} = 5 \text{ Vdc}$, $I_C = 2.5 \text{ Adc}$)		$V_{BE(ON)}$ *		1.45	Vdc
Delay Time	$V_{CC} = 30 \text{ Vdc}$, $I_C = 5 \text{ Adc}$, $V_{EB(Off)} = 3.7 \text{ Vdc}$, $I_{B1} = I_{B2} = 500 \text{ mAdc}$, $R_L = 6 \text{ Ohms}$	(t_{on})	$t_d +$	500	ns
Rise Time			$t_r +$		
Storage Time		(t_{off})	$t_s +$	1.3	us
Fall Time			$t_f +$		

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

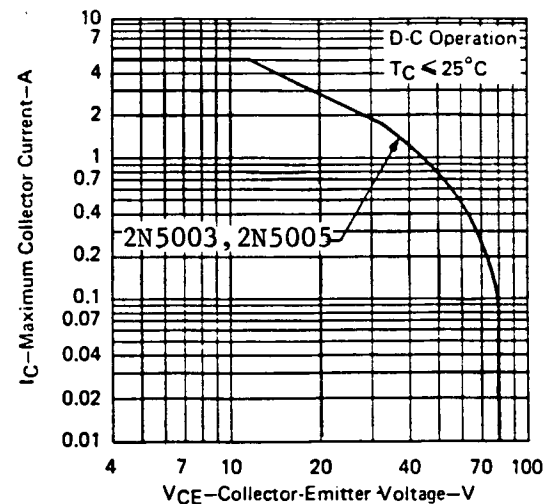
TYPICAL OPERATING CURVES

DISSIPATION DERATING CURVE



FORWARD BIAS DC SAFE OPERATION AREA (S.O.A.) CURVE

CURVES APPLY BELOW RATED V_{CEO} $T_C = 25^\circ\text{C}$



SSDI SOLID STATE DEVICES, INC.