2N5338 AND 2N5339
5 AMP
HIGH SPEED NPN TRANSISTOR
100 VOLTS

SSDI
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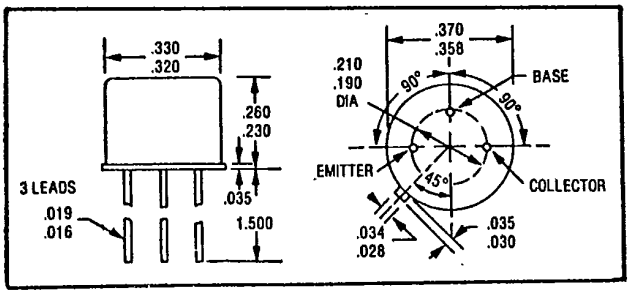
CASE STYLE W
JEDEC TO-5



FEATURES

- RADIATION TOLERANT
- FAST SWITCHING, 100 NSEC MAX td
- HIGH FREQUENCY, TYPICAL f_T 100 MHZ
- BVCEO 100 VOLTS MIN
- HIGH LINEAR GAIN, LOW SATURATION VOLTAGE
- 200°C OPERATING, GOLD EUTECTIC DIE ATTACH
- DESIGNED FOR COMPLEMENTARY USE WITH 2N6192 AND 2N6193
- 2N5334 THRU 2N5337 ALSO AVAILABLE

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CEO}	100	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	1	Amps
Total Device Dissipation @ TC = 25 °C	P_D	6	Watts
Derate above 25 °C		34.3	mW/°C
Operating and Storage Temperature	Tj, Tstg	-65 to +200	°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Value	Unit
Thermal Resistance, Junction to Case	RθJC	29.2	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min.	Max.	Unit
Collector - Emitter Breakdown Voltage* (I_C = 50 m Adc)	BV_{CEO}*	100		Vdc
Collector - Base Breakdown Voltage (I_C = 200 u Adc)	BV_{CBO}	100		Vdc
Emitter - Base Breakdown Voltage (I_E = 200 uAdc)	BV_{EBO}	6		Vdc

NOTE: All specifications subject to change without notice.

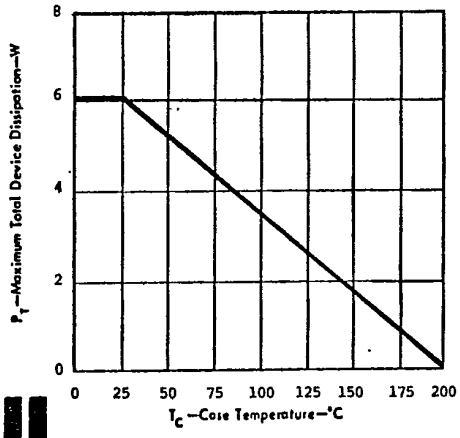
ELECTRICAL CHARACTERISTICS

Characteristics		Symbol	Min.	Max.	Unit
Collector Cutoff Current (VCE = 90 Vdc) (VCE = 90 Vdc, VEB = 1.5 Vdc) (VCE = 90 Vdc, VEB = 1.5 Vdc, TC = 150°C)				100 10 1.0	uAdc uAdc mAdc
Collector Cutoff Current (V_{CB} = 100 Vdc)		I_{CBO}		10	u Adc
Emitter Cutoff Current (V_{EB} = 6 Vdc)		I_{EBO}		100	u Adc
DC Current Gain*	2N5338 2N5339	h_{FE}*	30 60		
(I_C = 500 mAdc, V_{CE} = 2 Vdc)	2N5338 2N5339		30 60	120 240	
(I_C = 2 Adc, V_{CE} = 2 Vdc)	2N5338 2N5339		20 40		
(I_C = 5 Adc, V_{CE} = 2 Vdc)					
Collector - Emitter Saturation Voltage* (I_C = 2 Adc, I_B = 200 mAdc) (I_C = 5 Adc, I_B = 500 mAdc)		$V_{CE\ (SAT)}$*		0.7 1.2	Vdc
Base - Emitter Saturation Voltage* (I_C = 2 Adc, I_B = 200 mAdc) (I_C = 5 Adc, I_B = 500 mAdc)		$V_{BE\ (SAT)}$*		1.2 1.8	Vdc
Current - Gain - Bandwith Product (I_C = 500 mAdc V_{CE} = 10 Vdc, f = 10 M Hz)		f_T	30		M Hz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 100 KHz)		C_{ob}		250	pf
Input Capacitance (V_{BE} = 2 Vdc, I_C = 0, f = 100 KHz)		C_{ib}		1000	pf
Delay Time	(V_{CC} = 40 Vdc,	t_d		100	ns
Rise Time	I_C = 2.0 Adc,	t_r		100	ns
Storage Time	$V_{EB(Off)}$ = 3.0 Vdc,	t_s		2.0	us
Fall Time	I_{B1} = I_{B2} = 200 mAdc)	t_f		200	ns

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

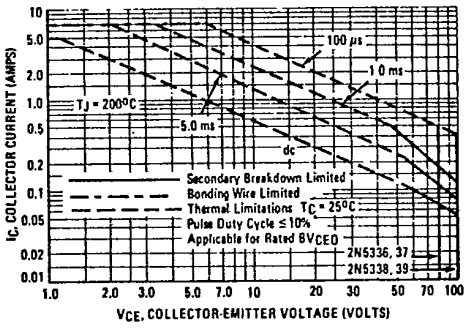
TYPICAL OPERATING CURVES

DISSIPATION DERATING CURVE



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

CURVES APPLY BELOW RATED V_{CEO} T_C = 25°C



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