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2N5188 SILICON NPN HIGH VOLTAGE TRANSISTOR

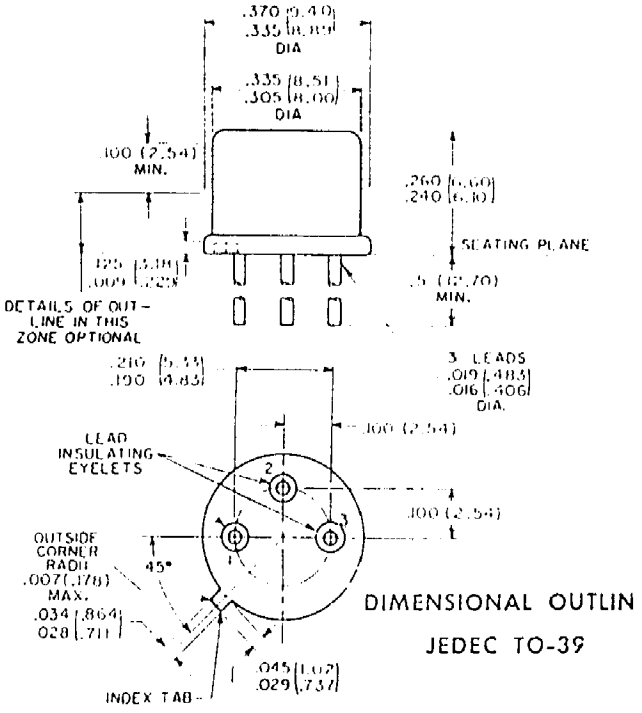
Maximum Ratings, Absolute-Maximum Values:

COLLECTOR-TO-BASE VOLTAGE, V_{CBO}	60 max.	V
COLLECTOR-TO-EMITTER VOLTAGE, V_{CEO}	25 max.	V
EMITTER-TO-BASE VOLTAGE, V_{EBO}	5 max.	V
COLLECTOR CURRENT, I_C	Limited by dissipation	
TRANSISTOR DISSIPATION, P_T:		
For case temperatures[a] up to 25°C	4 max.	W
For case temperatures[a] above 25°C	derate at 22.8mW/°C	
For ambient temperatures up to 25°C	0.8 max.	W
For ambient temperatures above 25°C	derate at 4.6mW/°C	
TEMPERATURE RANGE: Storage and Operating (Junction)	−65 to +200	°C
LEAD TEMPERATURE (During Soldering): At distances ≥ 1/32" from seating surface for 10 seconds max.	265 max.	°C

[a] Measured at center of seating surface.

Dimensions in inches and millimeters

Dimensions in parentheses are in millimeters and are derived from the basic inch dimensions as indicated.



DIMENSIONAL OUTLIN

JEDEC TO-39

ELECTRICAL CHARACTERISTICS, at $T_A = 25°C$

Characteristics	Symbols	TEST CONDITIONS					LIMITS			
		Collector-to-Emitter Voltage V_{CE}	Emitter-to-Base Voltage V_{EB}	Collector Current I_C	Emitter Current I_E	Base Current I_B	Type 2N5138			Units
		V	V	mA	mA	mA	Min.	Typ.	Max.	
Collector-Cutoff Current	I_{CBO}		$V_{CB} = 30$		0		-	-	0.5	μA
Collector-to-Emitter Breakdown Voltage	BV_{CEO}			30		0	25	-	-	V
Collector-to-Base Breakdown Voltage	BV_{CBO}			0.01	0		60	-	-	V
Emitter-to-Base Breakdown Voltage	BV_{EBO}			0	−0.01		5	-	-	V
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$			150 500		7.5 50	- -	- -	0.5 1*	V V
Base-to-Emitter Voltage	V_{BE}			150 500		7.5 50	- -	- -	1.1 1.5*	V V
Static Forward-Current Transfer Ratio	h_{FE}	1 0.5		500 150			20* 25	- -	- -	
Magnitude of Small-Signal Forward Current Transfer Ratio at f = 100 MHz	$\lvert h_{fe} \rvert$	10		50			2.5	-	-	
Output Capacitance at f = 140 kHz	C_{ob}		$V_{CB} = 10$		0		-	8	10	pF
			V_{CC}			$I_{B1} = I_{B2}$				
Storage Time See Fig. 21	t_s		6.4	150		15	-	-	35	ns
Turn-On-Time See Fig. 22	t_{on}		6.4	150		15	-	-	35	ns
Turn-Off-Time See Fig. 21	t_{off}		6.4	150		15	-	-	50	ns

*Pulsed conditions - Pulse duration $\leq 400\ \mu s$; duty factor ≤ 0.03.