New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

2N5239, 2N5240
High-Voltage, Silicon N-P-N Transistors

MAXIMUM RATINGS, *Absolute-Maximum Values:*

	2N5239	2N5240	
*V_{CBO}	300	375	V
$V_{CER(sus)}$			
$R_{BE} \leq 50\ \Omega$	250	350	V
*$V_{CEO(sus)}$	225	300	V
*V_{EBO}	6		V
*I_C	5		A
*I_B	2		A
*P_T:			
$T_C \leq 25°C$ and $V_{CE} \leq 125$ V	100		W
$T_C \leq 25°C$ and $V_{CE} \leq 125$ V	See Fig. 1		
$T_C > 25°C$ and $V_{CE} > 125$ V	See Fig. 1		
*T_{stg}, T_J	-65 to 200		°C
T_L			
At distance ≥1/32 in. (0.8 mm) from seating plane for 10 s max.	230		°C

* In accordance with JEDEC registration data

ELECTRICAL CHARACTERISTICS, *At Case Temperature (Tc) = 25°C unless otherwise specified*

CHARACTERISTIC	TEST CONDITIONS				LIMITS				UNITS
	VOLTAGE V dc		CURRENT A dc		2N5239		2N5240		
	V_{CE}	V_{BE}	I_C	I_B	Min.	Max.	Min.	Max.	
I_{CEO}	200			0	—	5	—	2	mA
I_{CEV}	300	-1.5			—	4	—	—	
	375	-1.5			—	—	—	2	
(Tc = 150°C)	300	-1.5			—	5	—	3	
I_{EBO} (V_{EB} = 5 V)			0		—	5	—	1	
(V_{EB} = 6 V)			0		—	20	—	20	
V_{EBO}				0.02	6	—	6	—	V
$V_{CEO(sus)}$[a]			0.2[b]		225	—	300	—	
$V_{CER(sus)}$[a] ($R_{BE} \leq 50\ \Omega$)			0.2[b]		250	—	350	—	
h_{FE}	10		0.4[b]		20	80	20	80	
	10		2[b]		20	80	20	80	
	10		4.5[b]		5	—	5	—	
V_{BE}	10		2[b]		—	3	—	3	
$V_{CE(sat)}$			2[b]	0.25	—	2.5	—	2.5	V
			4.5[b]	1.125	—	5	—	5	
$I_{S/b}$ (t = 1 s)	125				0.8	—	0.8	—	A
$\lvert h_{fe} \rvert$ (f = 1 MHz)	10		0.2		2	—	2	—	
h_{fe} (f = 1 kHz)	10		4		20	—	20	—	
f_T	10		0.2		2	—	2	—	MHz
C_{obo} (f = 1 MHz)	10[c]		0		—	250	—	250	pF
$R_{\theta JC}$					—	1.75	—	1.75	°C/W

* In accordance with JEDEC registration data.

[a] CAUTION: The sustaining voltages $V_{CEO(sus)}$ and $V_{CER(sus)}$ MUST NOT be measured on a curve tracer.

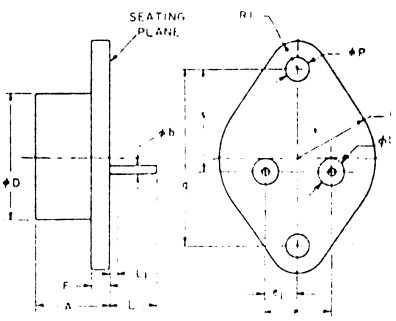
[b] Pulsed; pulse duration ≤ 350 μs, duty factory ≤ 2%.

[c] V_{CB} value.

Dimensional Outlines

TO-204AA

200-mil diameter pin isolation



Notes:
1: ϕb applies between L_1 and L. Diameter is uncon
In L_1.

SYMBOL	INCHES		MILLIMETERS		N
	MIN.	MAX.	MIN.	MAX.	
A	0.250	0.450	6.35	11.35	
ϕb	0.038	0.043	0.96	1.092	
ϕb_1	0.200 NOM.		5.08 NOM.		
ϕD	—	0.875	—	22.22	
e	0.420	0.440	10.67	11.17	
e_1	0.205	0.225	5.21	5.71	
F	0.060	0.135	1.53	3.42	
L	0.312	0.500	7.93	12.70	
L_1	—	0.050	—	1.27	
ϕP	0.151	0.161	3.836	4.089	
q	1.177	1.197	29.90	30.40	
R	0.495	0.525	12.58	13.33	
R_1	0.131	0.188	3.33	4.77	
s	0.655	0.675	16.64	17.14	

2: These dimensions should be measured at point
In. (1.270 mm) to 0.055 in. (1.397 mm) below
plane. When gage is not used, measurement
made at seating plane.