Microsemi LAWRENCE

TECHNICAL DATA

NPN MEDIUM POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/581

Devices			*Qualified Level*
2N4237	**2N4238**	**2N4239**	**JANTX JANTXV**

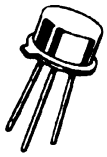
MAXIMUM RATINGS (T_A = 25^{0}C Unless Otherwise noted)

Ratings	Symbol	2N4237	2N4238	2N4239	Units
Collector-Emitter Voltage	V_{CEO}	40	60	80	Vdc
Collector-Base Voltage	V_{CBO}	50	80	100	Vdc
Emitter-Base Voltage	V_{EBO}	6.0			Vdc
Collector Current	I_C	1.0			Adc
Base Current	I_B	0.5			Adc
Total Power Dissipation @ T_A = +25^{0}C(1) @ T_C = +25^{0}C(2)	P_T	1.0 6.0			W W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200			°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	29	^{0}C/W

1) Derate linearly 5.7 mW/^{0}C for T_A > +25^{0}C
2) Derate linearly 34 mW/^{0}C for T_C > +25^{0}C



TO-39*

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS (T_A = 25^{0}C unless otherwise noted)

Characteristics		Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage					
I_C = 100 mAdc	2N4237	$V_{(BR)CEO}$		50	Vdc
	2N4238			80	
	2N4239			100	
Emitter-Base Cutoff Current					
V_{EB} = 6.0 Vdc		I_{EBO}		0.5	mAdc
Collector-Emitter Cutoff Current					
V_{CE} = 90 Vdc, V_{BE} = 1.5 Vdc					
V_{CE} = 50 Vdc	2N4237	I_{CEX}		100	nAdc
V_{CE} = 80 Vdc	2N4238			100	
V_{CE} = 10 Vdc	2N4239			100	
Collector-Base Cutoff Current					
V_{CE} = 50 Vdc	2N4237	I_{CBO}		100	nAdc
V_{CE} = 80 Vdc	2N4238			100	
V_{CE} = 10 Vdc	2N4239			100	

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS [3]				
Forward Current Transfer Ratio I_C = 250 mAdc, V_{CE} = 1.0 Vdc I_C = 500 mAdc, V_{CE} = 1.0 Vdc	h_{FE}	 30 30	150	
Collector-Emitter Saturation Voltage I_C = 500 Adc, I_B = 50 Adc I_C = 1.0 Adc, I_B = 0.1 Adc	$V_{CE(sat)}$		 0.3 0.6	Vdc
Base-Emitter Saturation Voltage I_C = 500 Adc, I_B = 50 Adc I_C = 1.0 Adc, I_B = 0.1 Adc	$V_{BE(sat)}$		 1.0 1.5	Vdc
DYNAMIC CHARACTERISTICS				
Magnitude of Common Emitter Small-Signal Short Circuit Forward-Current Transfer Ratio I_C = 100 mAdc, V_{CE} = 10 Vdc, f = 10 MHz	$\lvert h_{fe} \rvert$	3.0		
Output Capacitance V_{CB} = 10 Vdc, I_E = 0, f = 100 kHz	C_{obo}		100	pF

SAFE OPERATING AREA

DC Tests

T_C = +25^{0}C, 1 Cycle, t ≥ 0.5 s

Test 1

V_{CE} = 6.0 Vdc, I_C = 1.0 Adc

Test 2

V_{CE} = 12 Vdc, I_C = 500 mAdc

Test 3

V_{CE} = 30 Vdc, I_C = 166 mAdc 2N4237
V_{CE} = 50 Vdc, I_C = 100 mAdc 2N4238
V_{CE} = 70 Vdc, I_C = 71 mAdc 2N4239