Microsemi LAWRENCE

TECHNICAL DATA

PNP HIGH POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/461

Devices			*Qualified Level*
2N6211	**2N6212**	**2N6213**	**JAN JANTX JANTXV**

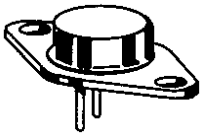
MAXIMUM RATINGS

Ratings	Symbol	2N6211	2N6212	2N6213	Unit
Collector-Emitter Voltage	V_{CEO}	225	300	350	Vdc
Collector-Base Voltage	V_{CBO}	275	350	400	Vdc
Emitter-Base Voltage	V_{EBO}	6.0			Vdc
Base Current	I_B	1.0			Adc
Collector Current	I_C	2.0			Adc
Total Power Dissipation @ $T_A = +25^0C$ (1) @ $T_C = +25^0C$ (2)	P_T	3.0 35			W W
Operating & Storage Temperature	T_{op}, T_{stg}	-55 to +200			^0C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	5.0	$^0C/W$

1) Derate linearly 17.1 mW/^{0}C for $T_A > +25^0C$
2) Derate linearly 200 mW/^{0}C for $T_C > +25^0C$



TO-66*
(TO-213AA)

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS ($T_C = 25^0C$ unless otherwise noted)

Characteristics		Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage I_C = 200 mAdc, f = 30-60 Hz	2N6211 2N6212 2N6213	$V_{(BR)CEO}$	225 300 350		Vdc
Collector-Emitter Breakdown Voltage I_C = 200 mAdc, f = 30-60 Hz, R_{BE} = 50 Ω	2N6211 2N6212 2N6213	$V_{(BR)CER}$	250 325 375		Vdc
Collector-Emitter Breakdown Voltage I_C = 200 mAdc, f = 30-60 Hz, R_{BE} = 50 Ω, V_{BE} = -1.5 Vdc	2N6211 2N6212 2N6213	$V_{(BR)CEX}$	275 350 400		Vdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics		Symbol	Min.	Max.	Unit
Collector-Emitter Cutoff Current V_{CE} = 150 Vdc		I_{CEO}		5.0	mAdc
Collector-Emitter Cutoff Current		I_{CEX}			mAdc
V_{CE} = 250 Vdc, V_{BE} = 1.5 Vdc	2N6211			0.5	
V_{CE} = 315 Vdc, V_{BE} = 1.5 Vdc	2N6212			0.5	
V_{CE} = 360 Vdc, V_{BE} = 1.5 Vdc	2N6213			0.5	
Collector-Base Cutoff Current		I_{CBO}			mAdc
V_{CB} = 275 Vdc	2N6211			15	
V_{CB} = 350 Vdc	2N6212			15	
V_{CB} = 400 Vdc	2N6213			15	
Emitter-Base Cutoff Current V_{EB} = 6.0 Vdc		I_{EBO}		0.5	mAdc

ON CHARACTERISTICS (3)

Forward-Current Transfer Ratio		h_{FE}			
I_C = 1.0 Adc, V_{CE} = 2.8 Vdc	2N6211		10	100	
I_C = 1.0 Adc, V_{CE} = 3.2 Vdc	2N6212		10	100	
I_C = 1.0 Adc, V_{CE} = 4.0 Vdc	2N6213		10	100	
I_C = 1.0 Adc, V_{CE} = 5.0 Vdc	2N6211		30	175	
	2N6212		30	175	
	2N6213		30	150	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			Vdc
I_C = 1.0 Adc, I_B = 0.125 Adc	2N6211			1.4	
	2N6212			1.6	
	2N6213			2.0	
Base-Emitter Saturation Voltage I_C = 1.0 Adc, I_B = 0.125 Adc		$V_{BE(sat)}$		1.4	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 0.2 Adc, V_{CE} = 10 Vdc, f = 5.0 MHz	$\lvert h_{fe} \rvert$	4.0	20	
Output Capacitance V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz	C_{obo}		220	pF

SWITCHING CHARACTERISTICS

Turn-On Time V_{CC} = 200 ± 10 Vdc; I_C = 1.0 Adc; I_{B1} = -0.125 Adc	t_{on}		0.6	µs
Turn-Off Time V_{CC} = 200 ± 10 Vdc; I_C = 1.0 Adc; I_{B1} = -0.125 Adc, I_{B2} = 0.125Adc	t_{off}		3.1	µs

SAFE OPERATING AREA

DC Tests

T_C = +25^{0}C, 1 Cycle, t = 1.0 s

Test 1

V_{CE} = 17.5 Vdc, I_C = 2.0 Adc — All Types

Test 2

V_{CE} = 40 Vdc, I_C = 0.875 Adc — All Types

Test 3

V_{CE} = 225 Vdc, I_C = 0.034 Adc — 2N6211

Test 4

V_{CE} = 300 Vdc, I_C = 0.02 Adc — 2N6212

Test 5

V_{CE} = 350 Vdc, I_C = 0.015 Adc — 2N6213

(3) Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2.0%.