



MICROCIRCUIT DATA SHEET

MJLM3045-X REV 0BL

Original Creation Date: 08/01/95
Last Update Date: 09/26/96
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**THREE ISOLATED NPN TRANSISTORS AND ONE NPN
DIFFERENTIALLY CONNECTED PAIR, GENERAL PURPOSE**

Industry Part Number

LM3045

NS Part Numbers

JL3045BCA
JL3045SCA

Prime Die

LM3045

Controlling Document

38510/10802, AMEND. 2 REV *

Processing

MIL-STD-883, Method 5004

Quality Conformance Inspection

MIL-STD-883, Method 5005

Subgrp Description Temp (°C)

1	Static tests at	+25
2	Static tests at	+125
3	Static tests at	-55
4	Dynamic tests at	+25
5	Dynamic tests at	+125
6	Dynamic tests at	-55
7	Functional tests at	+25
8A	Functional tests at	+125
8B	Functional tests at	-55
9	Switching tests at	+25
10	Switching tests at	+125
11	Switching tests at	-55

Electrical Characteristics

DC PARAMETERS

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS	
V(BR)cbo	Breakdown Voltage, Collector to Base	Ic = 10uA			40		V	1	
V(BR)ceo	Breakdown Voltage, Collector to Emitter	Ic = 1mA			15		V	1	
V(BR)cuo	Breakdown Voltage, Collector to Substrate	Ic = 10uA			60		V	1	
V(BR)ebo	Breakdown Voltage, Emitter to Base	Ie = 10uA			5		V	1	
Icbo	Collector to Base Cutoff Current	Vcb = 35V				10	nA	1	
						200	nA	2	
Iceo	Collector to Emitter Cutoff Current	Vce = 10V				10	nA	1	
						1000	nA	2	
Iceo(D)	Collector to Emitter Cutoff Current	Vce = 10V				10	nA	1	
						500	nA	2	
Icuo	Collector to Substrate Cutoff Current	Vcu = 40V				10	nA	1	
						200	nA	2	
Iebo(a)	Emitter to Base Cutoff Current	Veb = 4V				10	nA	1	
						200	nA	2	
Iebo(b)	Emitter to Base Cutoff Current	Veb = 4V				10	nA	1	
Vce(Sat)	Collector to Emitter Voltage (Saturated)	Ic = 10mA, Ib = 1mA				0.4	V	1	
						0.6	V	2	
Vbe(Sat)	Base Emitter Voltage (Saturated)	Ic = 10mA, Ib = 1mA				1	V	1	
						1.1	V	3	
Vbe	Base Emitter Voltage (Unsaturated)	Ie = -1mA				0.6	0.8	V	1
						0.45	0.65	V	2
						0.75	0.95	V	3
		Ie = -10mA				0.9	V	1	
						0.75	V	2	
1	V	3							

Electrical Characteristics

DC PARAMETERS (Continued)

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Vbeq1/Vbeq2	Input Offset Voltage, Differential Pair	Ie = -1mA				2	mV	1
						3	mV	2, 3
Vbeq1/Vbeq3	Input Offset Voltage for Pairs of Isolated Transistors					2	mV	1
						3	mV	2, 3
Vbeq1/Vbeq4	Input Offset Voltage for Pairs of Isolated Transistors					2	mV	1
						3	mV	2, 3
Vbeq1/Vbeq5	Input Offset Voltage for Pairs of Isolated Transistors					2	mV	1
						3	mV	2, 3
hFE	Static Forward Current Transfer Ratio (beta)	Ic = 10uA	4		45		B	1
		Ic = 1mA	4		70		B	1, 2
			4		40		B	3
		Ic = 10mA	4		60		B	1
hFEq1/hFEq2	Manitude of Static Beta Ratio for Any 2 Isolated Transistors	Ic = 1mA	4		0.9	1.1	BR	1
			4		0.85	1.15	BR	2, 3
hFEq1/hFEq3	Manitude of Static Beta Ratio for Any 2 Isolated Transistors	Ic = 1mA	4		0.9	1.1	BR	1
			4		0.85	1.15	BR	2, 3
hFEq1/hFEq4	Manitude of Static Beta Ratio for Any 2 Isolated Transistors	Ic = 1mA	4		0.9	1.1	BR	1
			4		0.85	1.15	BR	2, 3
hFEq1/hFEq5	Manitude of Static Beta Ratio for Any 2 Isolated Transistors	Ic = 1mA	4		0.9	1.1	BR	1
			4		0.85	1.15	BR	2, 3
Delta Vbe/Delta T	Temperature Coefficient of Base Emitter Voltage	Vce = 3V, Ie = -1mA	1		1.3	2.2	mV/°C	2
			1		-2.2	-1.3	mV/°C	3
Delta Vbeq1-Vbeq2/DT	Temperature Coefficient of Input Offset Voltage	Vce = 3V, Ie = -1mA	2		-15	15	uV/°C	2, 3

Electrical Characteristics

DC PARAMETERS (Continued)

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
Delta Vbeq1-Vebq 3/DT	Temperature Coefficient of Input Offset Voltage	Vce = 3V, Ie = -1mA	2		-15	15	uV/°C	2, 3
Delta Vbeq1-Vebq 4/DT	Temperature Coefficient of Input Offset Voltage	Vce = 3V, Ie = -1mA	2		-15	15	uV/°C	2, 3
Delta Vbeq1-Vebq 5/DT	Temperature Coefficient of Input Offset Voltage	Vce = 3V, Ie = -1mA	2		-15	15	uV/°C	2, 3
hFE	Low Frequency, Small Signal Forward Current Transfer Ratio	Ic = 1 to 1.1mA	4		60		HFE	4, 5
			4		35		HFE	6

AC PARAMETERS

ft	Gain-Bandwidth Product		3		300		MHz	4
Cs	Channel Separation		3		40		dB	7
td	Delay Time		3			100	nS	9
			3			160	nS	10, 11
tr	Rise Time		3			50	nS	9
			3			80	nS	10, 11
ts	Storage Time		3			200	nS	9
			3			300	nS	10, 11
tf	Fall Time		3			80	nS	9
			3			125	nS	10, 11

DC PARAMETERS: DRIFT VALUES

(The following conditions apply to all the following parameters, unless otherwise specified.)
DC: "Delta calculations performed on JAN S and QMLV devices at group B, subgroup 5 only".

Vbe	Base Emitter Voltage (Unsaturated)	Ie = -1mA			-0.01	0.01	V	1
hFE	Static Forward Current Transfer Ratio (beta)	Ic = 1mA			-10	10	%	1

Note 1: Calculated parameter. Absolute values are shown for Subgroup 2. Actual Deltas are negative with respect to temperature.

Note 2: Calculated parameter.

(Continued)

Note 3: Bench test.

Note 4: Units of measure will appear on MNET data only.