Microsemi LAWRENCE

TECHNICAL DATA

NPN SILICON SWITCHING TRANSISTOR

Qualified per MIL-PRF-19500/423

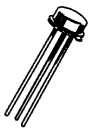
Devices		*Qualified Level*
2N5581	**2N5582**	**JAN JANTX JANTXV**

MAXIMUM RATINGS

Ratings	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	50	Vdc
Collector-Base Voltage	V_{CBO}	75	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	Vdc
Collector Current	I_C	800	mAdc
Total Power Dissipation @ $T_A = 25^0C$ (1) @ $T_C = 25^0C$ (2)	P_T	0.5 2.0	W W
Operating & Storage Junction Temperature Range	T_{op}, T_{stg}	-55 to +200	^0C

1) Derate linearly 2.86 mW/^{0}C for $T_A > 25^0C$

2) Derate linearly 11.43 mW/^{0}C for $T_C > 25^0C$



TO-46*
(TO-206AB)

*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage I_C = 10 mAdc	$V_{(BR)CEO}$	50		Vdc
Collector-Base Cutoff Current V_{CB} = 60 Vdc V_{CB} = 75 Vdc	I_{CBO}		10 10	ηAdc μAdc
Emitter-Base Cutoff Current V_{EB} = 4.0Vdc V_{EB} = 6.0Vdc	I_{EBO}		10 10	ηAdc μAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics		Symbol	Min.	Max.	Unit
ON CHARACTERISTICS (3)					
Forward-Current Transfer Ratio					
I_C = 0.1 mAdc, V_{CE} = 10 Vdc	2N5581	h_{FE}	30		
I_C =1.0 m Adc, V_{CE} = 10 Vdc			35		
I_C = 10 mAdc, V_{CE} = 10 Vdc			40		
I_C = 150 mAdc, V_{CE} = 10 Vdc			40	120	
I_C = 500 mAdc, V_{CE} = 10 Vdc			20		
I_C = 0.1 mAdc, V_{CE} = 10 Vdc	2N5582	h_{FE}	50		
I_C =1.0 m Adc, V_{CE} = 10 Vdc			75		
I_C = 10 mAdc, V_{CE} = 10 Vdc			100		
I_C = 150 mAdc, V_{CE} = 10 Vdc			100	300	
I_C = 500 mAdc, V_{CE} = 10 Vdc			30		
Collector-Emitter Saturation Voltage					
I_C = 150 mAdc, I_B = 15 mAdc		$V_{CE(sat)}$		0.3	Vdc
I_C = 500 mAdc, I_B = 50 mAdc				1.0	
Base-Emitter Voltage					
I_C = 150 mAdc, I_B = 15 mAdc		$V_{BE(sat)}$	0.6	1.2	Vdc
I_C = 500 mAdc, I_B = 50 mAdc				2.0	
DYNAMIC CHARACTERISTICS					
Forward Current Transfer Ratio					
I_C = 1.0 mAdc, V_{CE} = 10 Vdc	2N5581	h_{fe}		30	
	2N5582			50	
Forward Current Transfer Ratio		$\lvert h_{fe} \rvert$		2.5	
I_C = 50 mAdc, V_{CE} = 20 Vdc, f = 100 MHz					
Output Capacitance		C_{obo}		8.0	pF
V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz					
Input Capacitance		C_{ibo}		25	pF
V_{EB} = 0.5 Vdc, I_C = 0, 100 kHz ≤ f ≤ 1.0 MHz					
SWITCHING CHARACTERISTICS					
Turn-On Time		t_{on}		35	ηs
V_{CC} = 30 Vdc; I_C = 150 mAdc; I_{B1}= 15 mAdc					
Turn-Off Time		t_{off}		300	ηs
V_{CC} = 30 Vdc; I_C = 150 mAdc; I_{B1} = I_{B2} = 15 mAdc					

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