MD3467,F
MQ3467

MD3467
CASE 654-07, STYLE 1
MD3467F
CASE 610A-04, STYLE 1
MQ3467
CASE 607-04, STYLE 1

DUAL
AMPLIFIER TRANSISTOR

PNP SILICON

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MAXIMUM RATINGS

Rating	Symbol	Value		Unit
Collector-Emitter Voltage	V_{CEO}	40		Vdc
Collector-Base Voltage	V_{CBO}	40		Vdc
Emitter-Base Voltage	V_{EBO}	5.0		Vdc
Collector Current — Continuous	I_C	1.5		Adc
		One Die	All Die Equal Power	
Total Device Dissipation @ T_A = 25°C	P_D			mW
MD3467		600	650	
MD3467F		350	400	
MQ3467		400	600	
Derate above 25°C				mW/°C
MD3467		3.42	3.7	
MD3467F		2.0	2.28	
MQ3467		2.28	3.42	
Total Device Dissipation @ T_C = 25°C	P_D			Watts
MD3467		2.1	3.0	
MD3467F		1.25	2.5	
MQ3467		1.0	4.0	
Derate above 25°C				mW/°C
MD3467		12	17.2	
MD3467F		7.15	14.3	
MQ3467		5.71	22.8	
Operating and Storage Junction Temperature Range	T_J, T_{stg}	−65 to +200		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	One Die	All Die Equal Power	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$			°C/W
MD3467		83.3	58.3	
MD3467F		140	70	
MQ3467		175	43.8	
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$(1)			°C/W
MD3467		292	270	
MD3467F		500	438	
MQ3467		438	292	
		Junction to Ambient	Junction to Case	
Coupling Factors				%
MD3467		85	40	
MD3467F		75	0	
MQ3467 (Q1-Q2)		57	0	
(Q1-Q3 or Q1-Q4)		55	0	

(1) $R_{\theta JA}$ is measured with the device soldered into a typical printed circuit board.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage(2) (I_C = 10 mAdc, I_B = 0)	$V_{(BR)CEO}$	40	—	—	Vdc
Collector-Base Breakdown Voltage (I_C = 10 μAdc, I_E = 0)	$V_{(BR)CBO}$	40	—	—	Vdc
Emitter-Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)	$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current (V_{CB} = 30 Vdc, I_E = 0, T_A = 100°C)	I_{CBO}	—	—	10	μAdc
Emitter Cutoff Current (V_{BE} = 3.0 Vdc, I_C = 0)	I_{EBO}	—	—	100	nAdc

ELECTRICAL CHARACTERISTICS (continued) (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS					
DC Current Gain (I_C = 500 mAdc, V_{CE} = 1.0 Vdc)	h_{FE}	20	—	—	—
Collector-Emitter Saturation Voltage (I_C = 500 mAdc, I_B = 50 mAdc)	$V_{CE(sat)}$	—	0.32	0.5	Vdc
Base-Emitter Saturation Voltage (I_C = 500 mAdc, I_B = 50 mAdc)	$V_{BE(sat)}$	—	0.95	1.2	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain — Bandwidth Product (I_C = 50 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)	f_T	150	220	—	MHz
Output Capacitance (V_{CB} = 10 Vdc, I_E = 0, f = 140 kHz)	C_{obo}	—	8.5	20	pF
Input Capacitance (V_{BE} = 0.5 Vdc, I_C = 0, f = 140 kHz)	C_{ibo}	—	22	80	pF
SWITCHING CHARACTERISTICS					
Delay Time	(V_{CC} = 30 Vdc, V_{BE} = 2.0 Vdc, I_C = 500 mAdc, I_{B1} = 50 mAdc)	t_d	—	7.0	10	ns
Rise Time		t_r	—	17	30	ns
Storage Time	(V_{CC} = 30 Vdc, I_C = 500 mAdc, I_{B1} = I_{B2} = 50 mAdc)	t_s	—	58	80	ns
Fall Time		t_f	—	14	30	ns

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

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FIGURE 1 – DC CURRENT GAIN

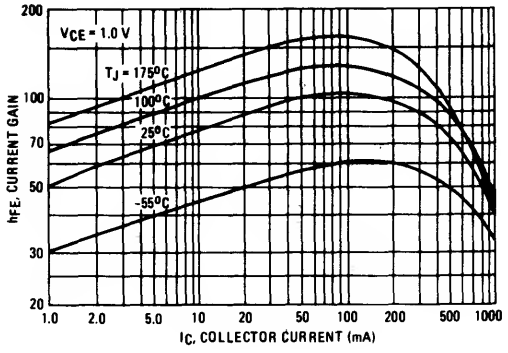

FIGURE 2 – COLLECTOR SATURATION REGION

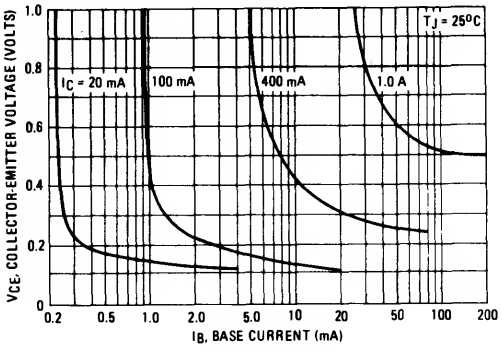

FIGURE 3 – "ON" VOLTAGE

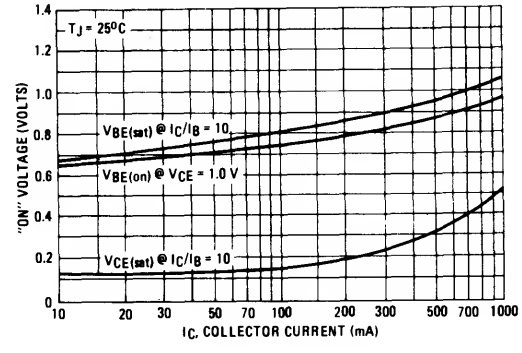

FIGURE 4 – TEMPERATURE COEFFICIENTS

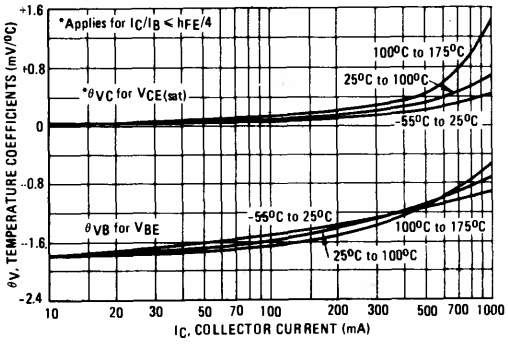

FIGURE 5 – ACTIVE REGION SAFE OPERATING AREA

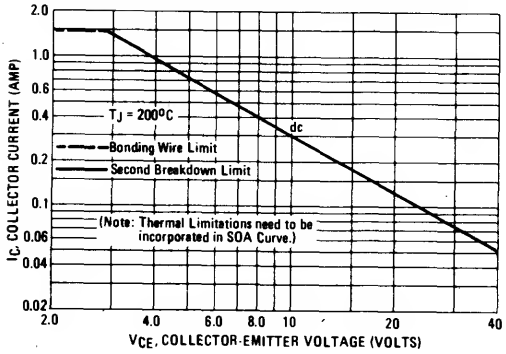

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FIGURE 6 – TURN-ON TIME

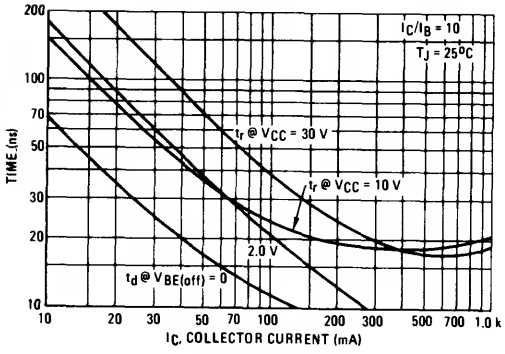


FIGURE 7 – RISE AND FALL TIME

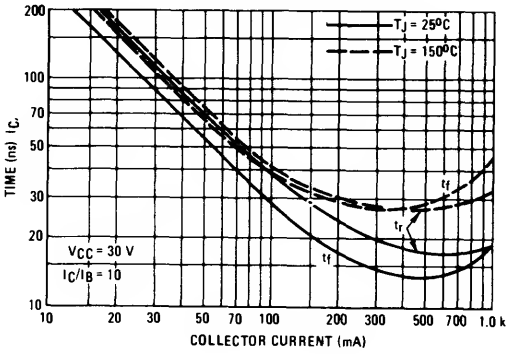


FIGURE 8 – STORAGE TIME

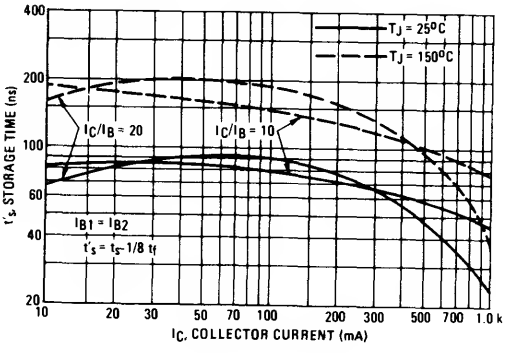


FIGURE 9 – FALL TIME

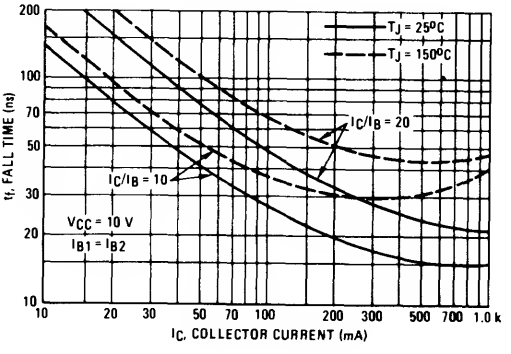


FIGURE 10 – SWITCHING TIME TEST CIRCUIT

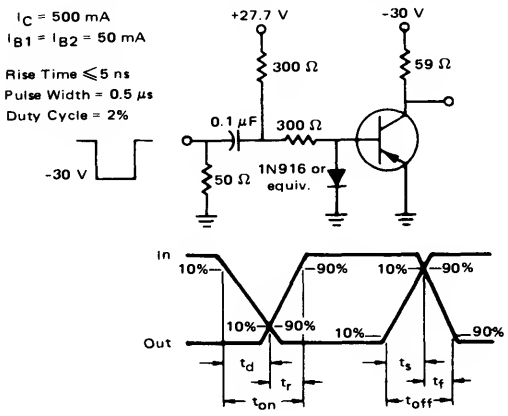
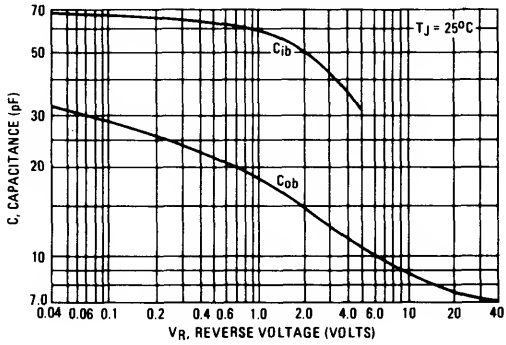


FIGURE 11 – CAPACITANCE



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