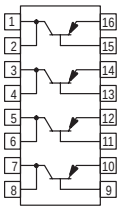
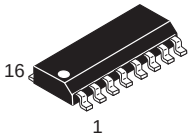
Quad General Purpose Transistors

PNP Silicon

MMPQ2907
MMPQ2907A





CASE 751B–05, STYLE 4
SO–16

MAXIMUM RATINGS

Rating	Symbol	MMPQ2907	MMPQ2907A	Unit
Collector–Emitter Voltage	V_{CEO}	–40	–60	Vdc
Collector–Base Voltage	V_{CB}	–60		Vdc
Emitter–Base Voltage	V_{EB}	–5.0		Vdc
Collector Current — Continuous	I_C	–600		mAdc
		Each Transistor	**Four Transistors Equal Power**	
Total Power Dissipation @ T_A = 25°C Derate above 25°C	P_D	0.52 4.2	1.0 8.0	Watts mW/°C
Total Power Dissipation @ T_C = 25°C Derate above 25°C	P_D	0.8 6.4	2.4 19.2	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150		°C

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

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector–Emitter Breakdown Voltage[1] (I_C = –10 mAdc, I_B = 0)	MMPQ2907 MMPQ2907A	$V_{(BR)CEO}$	–40 –60	— —	— —	Vdc
Collector–Base Breakdown Voltage (I_C = –10 μAdc, I_E = 0)		$V_{(BR)CBO}$	–60	—	—	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) (V_{CB} = –50 Vdc, I_E = 0)	 MMPQ2907 MMPQ2907A	I_{CBO}	 — —	 — —	 –50 –10	nAdc
Emitter Cutoff Current (V_{EB} = –3.0 Vdc, I_C = 0)		I_{EBO}	—	—	–50	nAdc

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle = 2.0%.

REV 1

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

Characteristic		Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS						
DC Current Gain(1)		h_{FE}				—
(I_C = –100 μAdc, V_{CE} = –10 Vdc)	MMPQ2907A		75	—	—	
(I_C = –1.0 mAdc, V_{CE} = –10 Vdc)	MMPQ2907A		100	—	—	
(I_C = –10 mAdc, V_{CE} = –10 Vdc)	MMPQ2907/2907A		75/100	—	—	
(I_C = –150 mAdc, V_{CE} = –10 Vdc)	MMPQ2907/2907A		100	—	300	
(I_C = –300 mAdc, V_{CE} = –10 Vdc)	MMPQ2907/2907A		30/50	—	—	
(I_C = –500 mAdc, V_{CE} = –10 Vdc)	MMPQ2907/2907A		50	—	—	
Collector–Emitter Saturation Voltage(1)		$V_{CE(sat)}$				Vdc
(I_C = –150 mAdc, I_B = –15 mAdc)	MMPQ2907		—	—	–0.4	
(I_C = –300 mAdc, I_B = –30 mAdc)	MMPQ2907		—	—	–1.6	
(I_C = –500 mAdc, I_B = –50 mAdc)	MMPQ2907		—	—	–1.6	
Base–Emitter Saturation Voltage(1)		$V_{BE(sat)}$				Vdc
(I_C = –150 mAdc, I_B = –15 mAdc)	MMPQ2907		—	—	–1.3	
(I_C = –300 mAdc, I_B = –30 mAdc)	MMPQ2907		—	—	–2.6	
(I_C = –500 mAdc, I_B = –50 mAdc)	MMPQ2907A		—	—	–2.6	
DYNAMIC CHARACTERISTICS						
Current–Gain — Bandwidth Product(1) (I_C = –50 mAdc, V_{CE} = –20 Vdc, f = 100 MHz)		f_T	200	350	—	MHz
Output Capacitance (V_{CB} = –10 Vdc, I_E = 0, f = 1.0 MHz)		C_{ob}	—	6.0	—	pF
Input Capacitance (V_{EB} = –2.0 Vdc, I_C = 0, f = 1.0 MHz)		C_{ib}	—	20	—	pF
SWITCHING CHARACTERISTICS						
Turn–On Time (V_{CC} = –30 Vdc, I_C = –150 mAdc, I_{B1} = –15 mAdc)		t_{on}	—	30	—	ns
Turn–Off Time (V_{CC} = –6.0 Vdc, I_C = –150 mAdc, I_{B1} = I_{B2} = –15 mAdc)		t_{off}	—	100	—	ns

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle = 2.0%.