

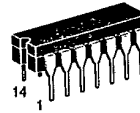
6367254 MOTOROLA SC (XSTRS/R F)

96D 82492 D

T-43-25

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	30	Vdc
Collector-Base Voltage	V_{CBO}	60	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	Vdc
Collector Current — Continuous	I_C	500	mA
		Each Transistor	Total Device
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	0.65 3.72	1.9 10.88 Watts mW/°C
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.3 7.43	4.6 26.3 Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	°C

**MHQ6001
MHQ6002****CASE 632-02, STYLE 1
TO-116****QUAD
COMPLEMENTARY TRANSISTOR**

NPN/PNP SILICON

Refer to MHQ2222 for NPN graphs.*

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage(1) ($I_C = 10\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	30	—	—	Vdc
Collector-Base Breakdown Voltage ($I_C = 10\text{ }\mu\text{A}$, $I_E = 0$)	$V_{(BR)CBO}$	60	—	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10\text{ }\mu\text{A}$, $I_C = 0$)	$V_{(BR)EBO}$	5.0	—	—	Vdc
Collector Cutoff Current ($V_{CB} = 50\text{ Vdc}$, $I_E = 0$)	I_{CBO}	—	—	20	nA
Emitter Cutoff Current ($V_{BE} = 3.0\text{ Vdc}$, $I_C = 0$)	I_{EBO}	—	—	30	nA

ON CHARACTERISTICS

DC Current Gain(1) ($I_C = 1.0\text{ mA}$, $V_{CE} = 10\text{ Vdc}$)	MHQ6001 MHQ6002	h_{FE}	25 50	—	—	—
($I_C = 10\text{ mA}$, $V_{CE} = 10\text{ Vdc}$)	MHQ6001 MHQ6002		35 75	—	—	—
($I_C = 150\text{ mA}$, $V_{CE} = 10\text{ Vdc}$)	MHQ6001 MHQ6002		40 100	—	—	—
($I_C = 300\text{ mA}$, $V_{CE} = 10\text{ Vdc}$)	MHQ6001 MHQ6002		20 30	—	—	—
Collector-Emitter Saturation Voltage(1) ($I_C = 150\text{ mA}$, $I_B = 15\text{ mA}$) ($I_C = 300\text{ mA}$, $I_B = 30\text{ mA}$)		$V_{CE(sat)}$	—	—	0.4 1.4	Vdc
Base-Emitter Saturation Voltage(1) ($I_C = 150\text{ mA}$, $I_B = 15\text{ mA}$) ($I_C = 300\text{ mA}$, $I_B = 30\text{ mA}$)		$V_{BE(sat)}$	—	—	1.3 2.0	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product(1) ($I_C = 50\text{ mA}$, $V_{CE} = 20\text{ Vdc}$, $f = 100\text{ kHz}$)		f_T	—	400	—	MHz
Output Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 1\text{ MHz}$)	NPN PNP	C_{obo}	—	6.0 4.5	—	pF
Input Capacitance ($V_{BE} = 2.0\text{ Vdc}$, $I_C = 0$, $f = 1\text{ MHz}$)	NPN PNP	C_{ibo}	—	20 17	—	pF

SWITCHING CHARACTERISTICS

Turn-On Time ($V_{CC} = 30\text{ Vdc}$, $V_{BE} = 0.5\text{ Vdc}$, $I_C = 150\text{ mA}$, $I_{B1} = 15\text{ mA}$)		t_{on}	—	30	—	ns
Turn-Off Time ($V_{CC} = 30\text{ Vdc}$, $I_C = 150\text{ mA}$, $I_{B1} = I_{B2} = 15\text{ mA}$)		t_{off}	—	225	—	ns

(1) Pulse Test: Pulse Width $\leq 300\text{ }\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

*Refer to MHQ2907 for PNP graphs.

MOTOROLA SMALL-SIGNAL SEMICONDUCTORS