MD6002HX, HXV (DUAL)
MD6002FHXV (DUAL)
MHQ6002HX, HXV (QUAD)
MQ6002HXV (QUAD)

CRYSTALONICS
2805 Veterans Highway
Suite 14
Ronkonkoma, N.Y. 11779

Dual/Quad
NPN/PNP Complementary Pairs
Small-Signal Transistors

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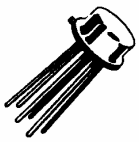
. . .designed for general-purpose amplifier and switching applications.

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		mAdc
		Each Transistor	Total Device	
Device Dissipation	P_T			Watts
@ T_A = 25°C				
MD6002		0.575	0.625	
MD6002F		0.35	0.4	
MHQ6002		0.65	1.9	
MQ6002		0.4	0.6	
Derate above 25°C				mW/°C
MD6002		3.25	3.57	
MD6002F		2.0	2.28	
MHQ6002		3.72	10.88	
MQ6002		2.28	3.42	
@ T_C = 25°C				Watts
MD6002		1.8	3.57	
MD6002F		1.0	2.28	
MHQ6002		1.3	10.88	
MQ6002		0.9	3.6	
Derate above 25°C				mW/°C
MD6002		10.3	14.3	
MD6002F		5.71	11.4	
MHQ6002		7.43	26.3	
MQ6002		5.13	20.15	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	−65 to 200		°C



MD6002
CASE 654-07
(TO-78)

MD6002F
CASE 610A-04

MQ6002
CASE 607-04

MHQ6002
CASE 632-08
(TO-116)

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)				
Characteristic	**Symbol**	**Min**	**Max**	**Unit**
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage(1) (I_C = 10 mAdc, I_B = 0)	$V_{(BR)CEO}$	30	—	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} = 50 Vdc, I_E = 0)	I_{CBO}	—	0.02	μAdc
Emitter Cutoff Current (V_{BE} = 3.0 Vdc, I_C = 0)	I_{EBO}	—	0.03	μAdc
ON CHARACTERISTICS				
DC Current Gain(1) (I_C = 1.0 mAdc, V_{CE} = 10 Vdc) (I_C = 10 mAdc, V_{CE} = 10 Vdc) (I_C = 150 mAdc, V_{CE} = 10 Vdc) (I_C = 300 mAdc, V_{CE} = 10 Vdc)	h_{FE}	 50 75 100 30	 — — 300 —	—
Collector-Emitter Saturation Voltage (I_C = 150 mAdc, I_B = 15 mAdc) (I_C = 300 mAdc, I_B = 30 mAdc)	$V_{CE(sat)}$	 — —	 0.4 1.4	Vdc
Base-Emitter Saturation Voltage (I_C = 150 mAdc, I_B = 15 mAdc) (I_C = 300 mAdc, I_B = 30 mAdc)	$V_{BE(sat)}$	 — —	 1.3 2.0	Vdc

ASSURANCE TESTING (Pre/Post Burn-In)				
		Initial and End Point Limits		
Characteristics Tested	**Symbol**	**Min**	**Max**	**Unit**
Collector Cutoff Current (V_{CB} = 50 Vdc)	I_{CBO}	—	20	nAdc
DC Current Gain(1) (I_C = 150 mAdc, V_{CE} = 10 Vdc)	h_{FE}	100	300	—

Delta from Pre-Burn-In Measured Values		**Min**	**Max**	
Delta Collector Cutoff Current	ΔI_{CBO}	—	±100 or ±5.0 whichever is greater	% of Initial Value nAdc
Delta DC Current Gain(1)	Δh_{FE}	—	±25	% of Initial Value

(1) Pulsed. Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.