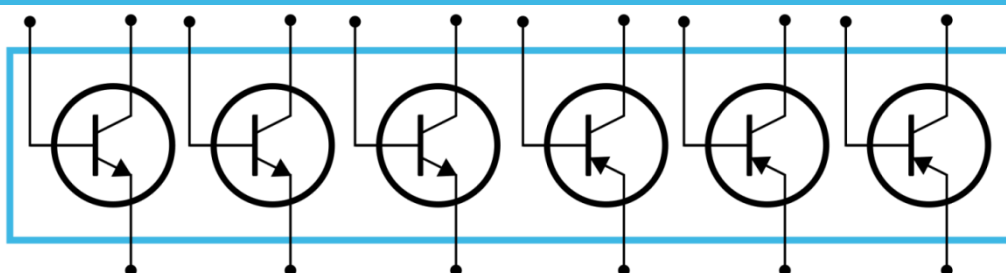
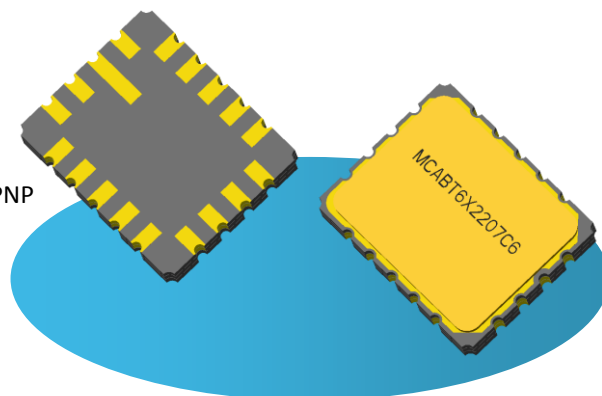


MULTI CHIP ARRAY COMPLEMENTARY 3x 2N2222A 3x 2N2907A ISOLATED BIPOLAR TRANSISTORS MCABT6X2207C6

- Hermetic MO-042AA (LCC6)
- Silicon Planar Epitaxial 3x 2N2222A NPN & 3x 2N2907A PNP
- Transistors In An Isolated Array
- High Speed Low Saturation Switching
- High Reliability Screening Options Available



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

		2N2222	2N2907
V _{CB0}	Collector - Base Voltage	75V	-60V
V _{CEO}	Collector - Emitter Voltage	40V	-60V
V _{EBO}	Emitter - Base Voltage	6V	-5V
I _C	Continuous Collector Current	800mA	-600mA
P _D ⁽¹⁾	Power Dissipation T _{SP} = 25°C	1.94W	2.18W
	Derate Above 25°C	11.0mW/°C	12.5mW/°C
	Total Power Dissipation ⁽²⁾ T _{SP} = 25°C	5.83W	
	Derate Above 25°C	33.33mW/°C	
T _J	Junction Temperature Range	-65 to +200°C	
T _{stg}	Storage Temperature Range	-65 to +200°C	

THERMAL PROPERTIES

Symbols	Parameters	2N2222 Max.	2N2907 Max.	Units
R _{θJSP} ⁽¹⁾⁽³⁾	Thermal Resistance, Junction To Solder Pad (Per Device)	90	80	°C/W
R _{θJSP} ⁽²⁾⁽³⁾	Thermal Resistance, Junction To Solder Pad (Package)	30		°C/W

Notes

- (1) One device conducting only.
- (2) With all parts conducting, maximum power dissipation per device = 972mW, limited by maximum junction temperature.
- (3) Stated R_{θJSP} properties assume infinite heatsink.

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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2N2222A ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$V_{(BR)CEO}^{(4)}$	Collector - Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	40			V
$V_{(BR)CBO}$	Collector - Base Breakdown Voltage	$I_C = 10\mu\text{A}$ $I_E = 0$	75			
$V_{(BR)EBO}$	Emitter - Base Breakdown Voltage	$I_E = 10\mu\text{A}$ $I_C = 0$	6.0			
I_{CEX}	Collector - Emitter Cut - Off Current	$V_{EB} = 3\text{V}$ $V_{CE} = 60\text{V}$			10	nA
I_{CBO}	Collector - Base Cut - Off Current	$V_{CB} = 75\text{V}$ $I_E = 0$			10	μA
		$V_{CB} = 60\text{V}$ $I_E = 0$			10	nA
		$T_A = 150^\circ\text{C}$			10	μA
I_{EBO}	Emitter Cut - Off Current	$V_{EB} = 6\text{V}$ $I_C = 0$			10	μA
		$V_{EB} = 3\text{V}$ $I_C = 0$			10	nA
I_{CES}	Collector Cut - Off Current	$V_{CE} = 40\text{V}$			50	nA
$V_{CE(sat)}^{(4)}$	Collector - Emitter Saturation Voltage	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$			0.3	V
		$I_C = 500\text{mA}$ $I_B = 50\text{mA}$			1.0	
$V_{BE(sat)}^{(4)}$	Base - Emitter Saturation Voltage	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$	0.6		1.2	
		$I_C = 500\text{mA}$ $I_B = 50\text{mA}$			2.0	
h_{FE}	Forward Current Transfer Ratio	$I_C = 0.1\text{mA}$ $V_{CE} = 10\text{V}$	35			
		$I_C = 1.0\text{mA}$ $V_{CE} = 10\text{V}$	50			
		$I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$	75			
		$T_A = -55^\circ\text{C}$	35			
		$I_C = 150\text{mA}$ $V_{CE} = 10\text{V}^{(4)}$	100		300	
		$I_C = 500\text{mA}$ $V_{CE} = 10\text{V}^{(4)}$	40			

MULTI CHIP ARRAY 3x 2N2222 3x 2N2907
ISOLATED BIPOLAR TRANSISTORS



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2N2222A DYNAMIC CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$C_{obo}^{(5)}$	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			8	pF
$C_{ibo}^{(5)}$	Input Capacitance	$V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			30	
$ h_{fe} ^{(5)}$	Small Signal Current Gain	$I_C = 1.0\text{mA}$ $V_{CE} = 10\text{V}$ $f = 1.0\text{kHz}$	50		300	
		$I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$ $f = 1.0\text{kHz}$	75		375	
$f_T^{(5)}$	Transition Frequency	$I_C = 20\text{mA}$ $V_{CE} = 20\text{V}$ $f = 100\text{MHz}$	300			MHz
$t_d^{(5)}$	Delay Time	$V_{CC} = 30\text{V}$ $V_{BE} = 0.5\text{V}$			10	ns
$t_r^{(5)}$	Rise Time	$I_C = 150\text{mA}$ $I_{B1} = 15\text{mA}$			25	
$t_s^{(5)}$	Storage Time	$V_{CC} = 30\text{V}$ $V_{BE} = 0.5\text{V}$			225	
$t_f^{(5)}$	Fall Time	$I_C = 150\text{mA}$ $I_{B1} = I_{B2} = 15\text{mA}$			60	

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2N2907A ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$V_{(BR)CEO}^{(4)}$	Collector - Emitter Breakdown Voltage	$I_C = -10\text{mA}$ $I_B = 0$	-60			V
$V_{(BR)CBO}$	Collector - Base Breakdown Voltage	$I_C = -10\mu\text{A}$ $I_E = 0$	-60			
$V_{(BR)EBO}$	Emitter - Base Breakdown Voltage	$I_E = -10\mu\text{A}$ $I_C = 0$	-5.0			
I_{CEX}	Collector - Emitter Cut - Off Current	$V_{EB} = -0.5\text{V}$ $V_{CE} = -30\text{V}$			-50	nA
I_{CBO}	Collector - Base Cut - Off Current	$V_{CB} = -50\text{V}$ $I_E = 0$			-10	nA
		$T_A = 150^\circ\text{C}$			-10	μA
$V_{CE(sat)}^{(4)}$	Collector - Emitter Saturation Voltage	$I_C = -150\text{mA}$ $I_B = -15\text{mA}$			-0.4	V
		$I_C = -500\text{mA}$ $I_B = -50\text{mA}$			-1.6	
$V_{BE(sat)}^{(4)}$	Base - Emitter Saturation Voltage	$I_C = -150\text{mA}$ $I_B = -15\text{mA}$	-0.6		-1.3	
		$I_C = -500\text{mA}$ $I_B = -50\text{mA}$			-2.6	
h_{FE}	Forward Current Transfer Ratio	$I_C = -0.1\text{mA}$ $V_{CE} = -10\text{V}$	75			
		$I_C = -1.0\text{mA}$ $V_{CE} = -10\text{V}$	100		450	
		$I_C = -10\text{mA}$ $V_{CE} = -10\text{V}$	100			
		$T_A = -55^\circ\text{C}$	50			
		$I_C = -150\text{mA}$ $V_{CE} = -10\text{V}^{(4)}$	100		300	
		$I_C = -500\text{mA}$ $V_{CE} = -10\text{V}^{(4)}$	50			

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2N2907A DYNAMIC CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$C_{obo}^{(5)}$	Output Capacitance	$V_{CB} = -10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			8	pF
$C_{ibo}^{(5)}$	Input Capacitance	$V_{EB} = -2.0\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			30	
$ h_{fe} ^{(5)}$	Small Signal Current Gain	$I_C = -1.0\text{mA}$ $V_{CE} = -10\text{V}$ $f = 1.0\text{kHz}$	100			
$f_T^{(5)}$	Transition Frequency	$I_C = -50\text{mA}$ $V_{CE} = -20\text{V}$ $f = 100\text{MHz}$	200			MHz
$t_{on}^{(5)}$	Turn On Time	$V_{CC} = -30\text{V}$ $I_C = -150\text{mA}$ $I_{B1} = -15\text{mA}$			45	ns
$t_{off}^{(5)}$	Turn Off Time	$V_{CC} = -30\text{V}$ $I_C = -150\text{mA}$ $I_B = -I_{B2} = -15\text{mA}$			300	

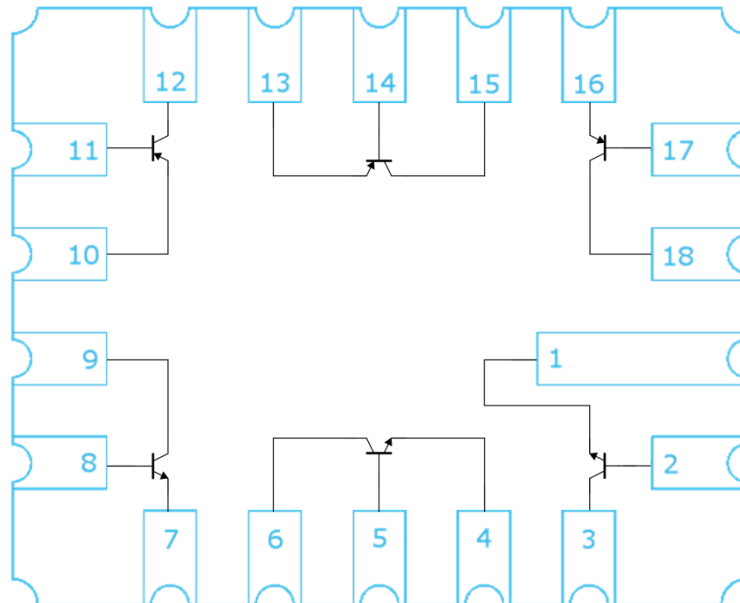
Notes

- (4) Pulse Width $\leq 380\mu\text{s}$, duty cycle $\delta \leq 2\%$.
(5) Characteristics by design.

MULTI CHIP ARRAY 3x 2N2222 3x 2N2907
ISOLATED BIPOLAR TRANSISTORS

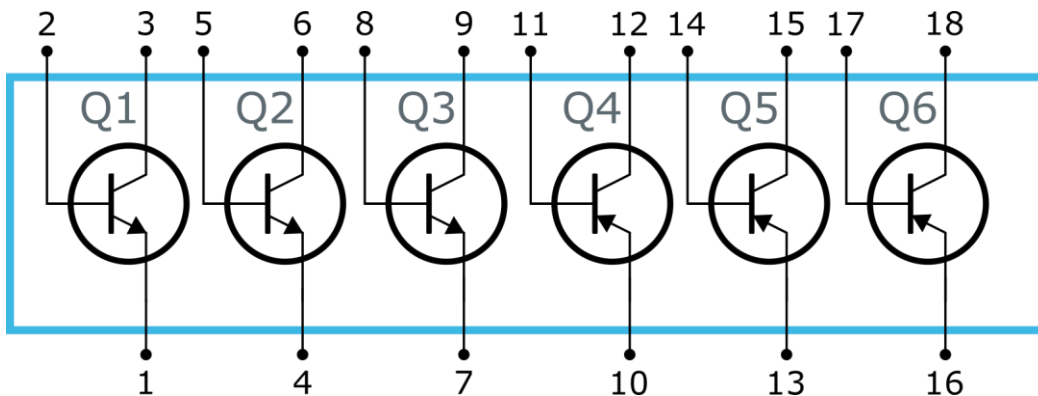
MCABT6X2207C6

INTERNAL LAYOUT VISUALISATION



(Underside View)

PACKAGE PIN CONNECTIONS



Pin	Device	Connection
1	Q1	Emitter
2	Q1	Base
3	Q1	Collector
4	Q2	Emitter
5	Q2	Base
6	Q2	Collector
7	Q3	Emitter
8	Q3	Base
9	Q3	Collector

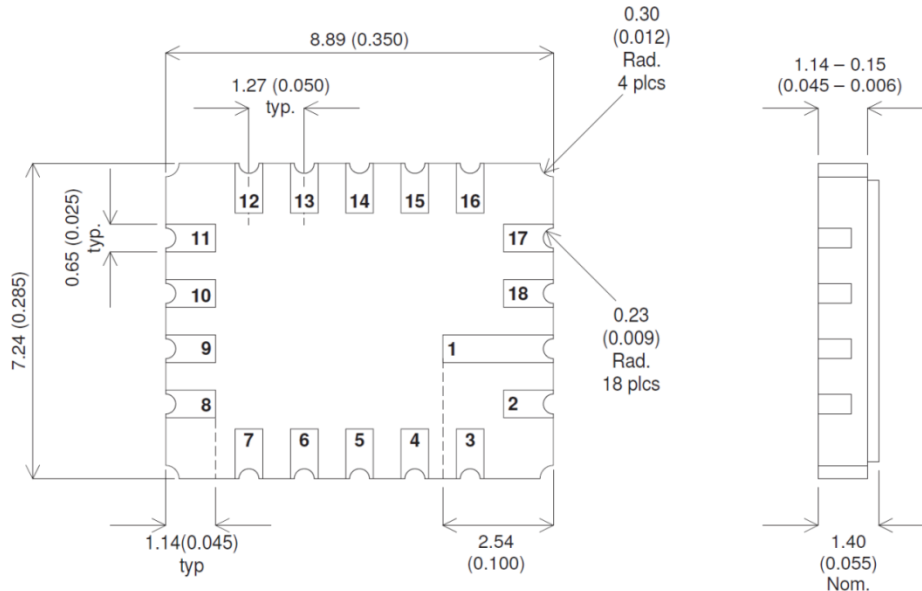
Pin	Device	Connection
10	Q4	Emitter
11	Q4	Base
12	Q4	Collector
13	Q5	Emitter
14	Q5	Base
15	Q5	Collector
16	Q6	Emitter
17	Q6	Base
18	Q6	Collector

MULTI CHIP ARRAY 3x 2N2222 3x 2N2907 ISOLATED BIPOLAR TRANSISTORS

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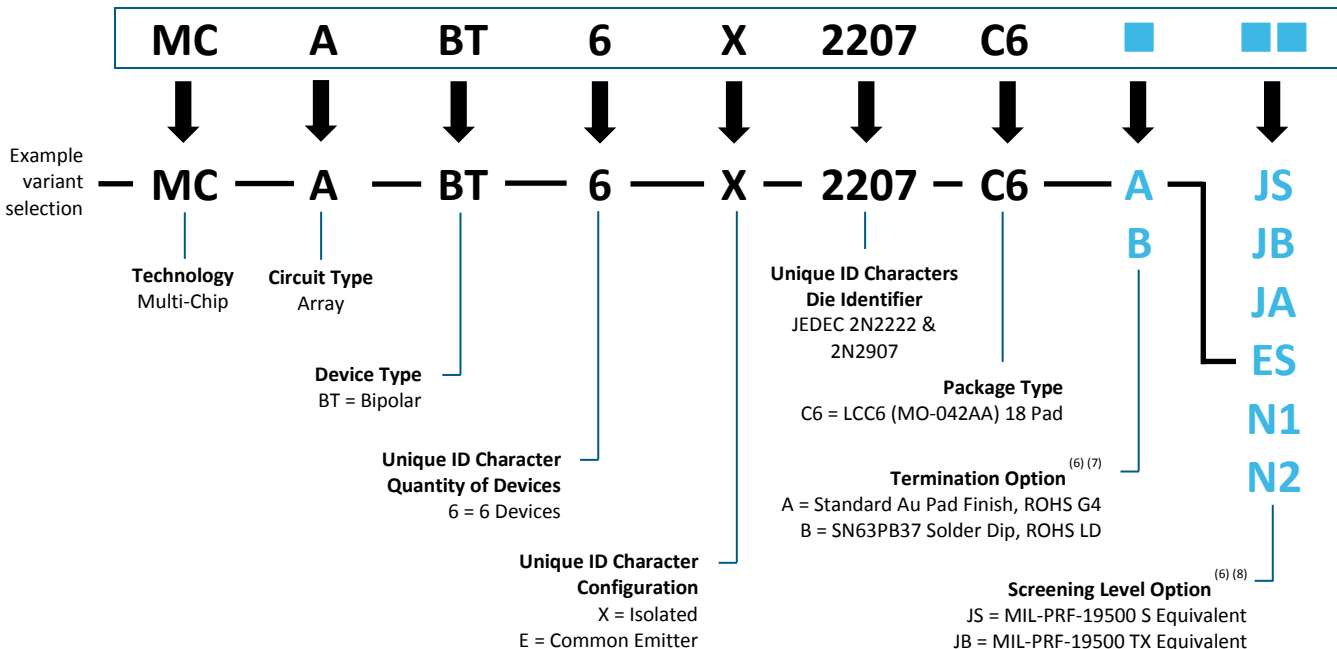
MECHANICAL DATA

Dimensions in mm (inches)



**C6 (MO-042AA)
(Underside View)**

PART VARIANT OPTIONS ⁽⁶⁾



Notes

- (6) Part variant options (termination, screening level) to be specified at point of order.
- (7) LD = e0, G4 = e4, as defined in J-STD-609 2nd Level Interconnect Category.
- (8) Please enquire with customer services regarding other requirements (pin connections, termination & screening level).