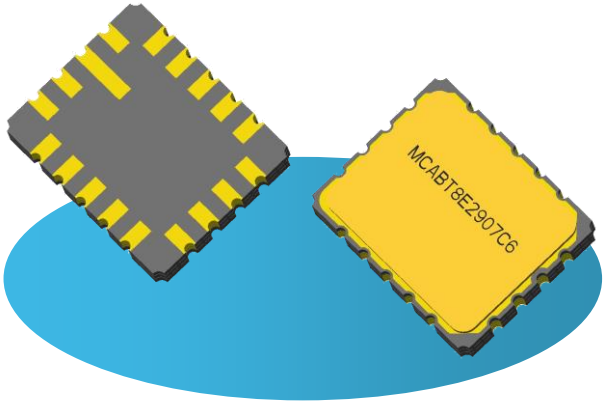
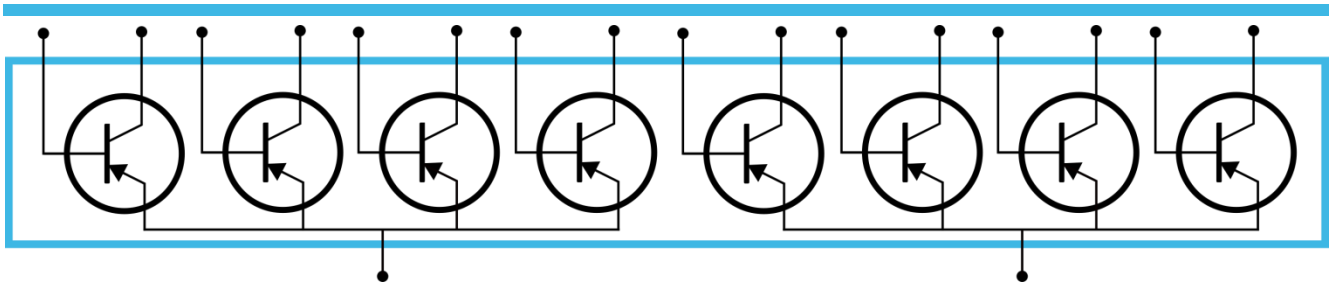
MULTI CHIP ARRAY 8 x COMMON EMITTER BIPOLAR 2N2907A TRANSISTORS

MCABT8E2907C6

- Hermetic MO-042AA (LCC6)
- Silicon Planar Epitaxial 8x 2N2907A PNP
- Transistors In A Common Emitter Array
- High Speed Low Saturation Switching
- High Reliability Screening Options Available





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

V_{CBO}	Collector - Base Voltage		-60V
V_{CEO}	Collector - Emitter Voltage		-60V
V_{EBO}	Emitter - Base Voltage		-5V
I_C	Continuous Collector Current		-600mA
P_D (1)	Power Dissipation	T_{SP} = 25°C	2.18W
		Derate Above 25°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	Max.	Units
$R_{\theta JSP}$ (1)(3)	Thermal Resistance, Junction To Solder Pad (Per Device)	80	°C/W
$R_{\theta JSP}$ (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 = 729mW, limited by maximum junction temperature.

(3) Stated $R_{\theta JSP}$ properties assume infinite heatsink.

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2N2907A ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise stated)

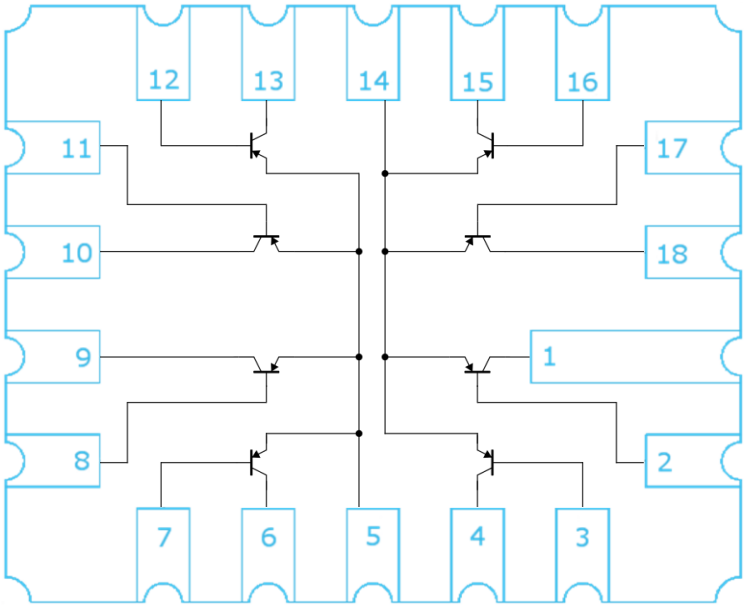
Symbols	Parameters	Test Conditions		Min.	Typ.	Max.	Units
$V_{(BR)CEO}$ (4)	Collector - Emitter Breakdown Voltage	I_C = -10mA	I_B = 0	-60			V
$V_{(BR)CBO}$	Collector - Base Breakdown Voltage	I_C = -10µA	I_E = 0	-60			
$V_{(BR)EBO}$	Emitter - Base Breakdown Voltage	I_E = -10µA	I_C = 0	-5.0			
I_{CEX}	Collector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

2N2907A DYNAMIC CHARACTERISTICS (T_A = 25°C unless otherwise stated)

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

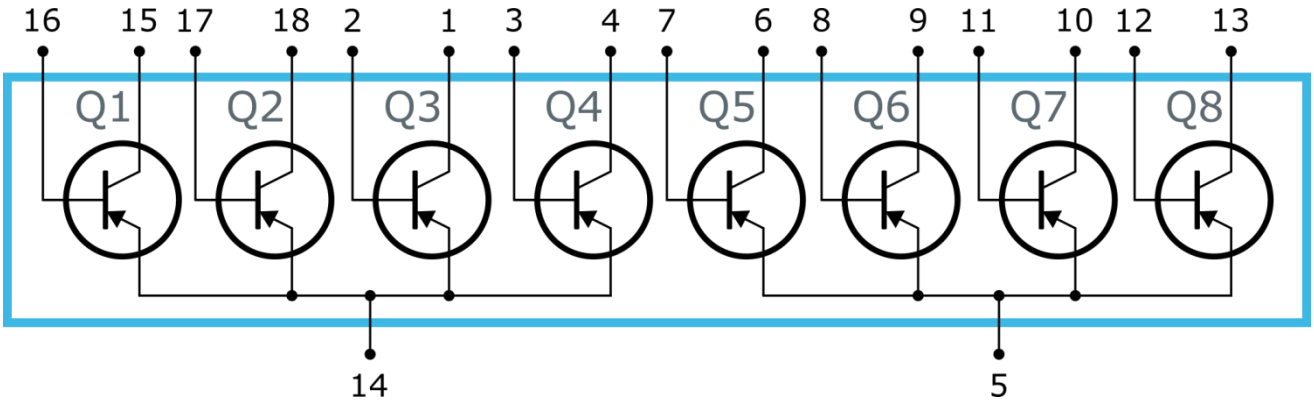
Notes
(4) Pulse Width ≤ 380µs, duty cycle δ ≤ 2%.
(5) Characteristics by design.

INTERNAL LAYOUT VISUALISATION



(Underside View)

PACKAGE PIN CONNECTIONS

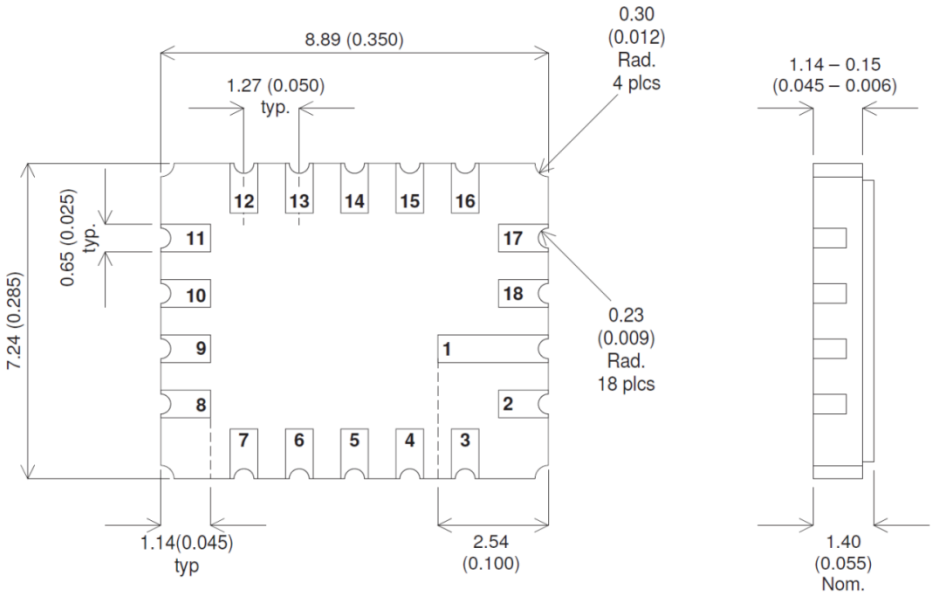


Pin	Device	Connection
1	Q3	Collector
2	Q3	Base
3	Q4	Base
4	Q4	Collector
5	Q5, Q6, Q7, Q8	Common Emitter
6	Q5	Collector
7	Q5	Base
8	Q6	Base
9	Q6	Collector

Pin	Device	Connection
10	Q7	Collector
11	Q7	Base
12	Q8	Base
13	Q8	Collector
14	Q1, Q2, Q3, Q4	Common Emitter
15	Q1	Collector
16	Q1	Base
17	Q2	Base
18	Q2	Collector

MECHANICAL DATA

Dimensions in mm (inches)



C6 (MO-042AA)
(Underside View)

PART VARIANT OPTIONS [6]

MC	A	BT	8	E	2907	C6	■	■■

Example variant selection: MC — A — BT — 8 — E — 2907 — C6 — A — JS

Technology
Multi-Chip: MC

Circuit Type
Array: A

Device Type
BT = Bipolar: BT

Unique ID Character Quantity of Devices
8 = 8 Devices: 8

Unique ID Character Configuration
X = Isolated
E = Common Emitter: E

Unique ID Characters Die Identifier
JEDEC 2N2907: 2907

Package Type
C6 = LCC6 (MO-042AA) 18 Pad: C6

Termination Option [6] [7]
A = Standard Au Pad Finish, ROHS G4
B = SN63PB37 Solder Dip, ROHS LD: A, B

Screening Level Option [6] [8]
JS = MIL-PRF-19500 S Equivalent
JB = MIL-PRF-19500 TX Equivalent
JA = MIL-PRF-19500 TX/V Equivalent
ES = ESCC5000 Equivalent
N1 & N2 = New Space
JS, JB, JA, ES, N1, N2

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).