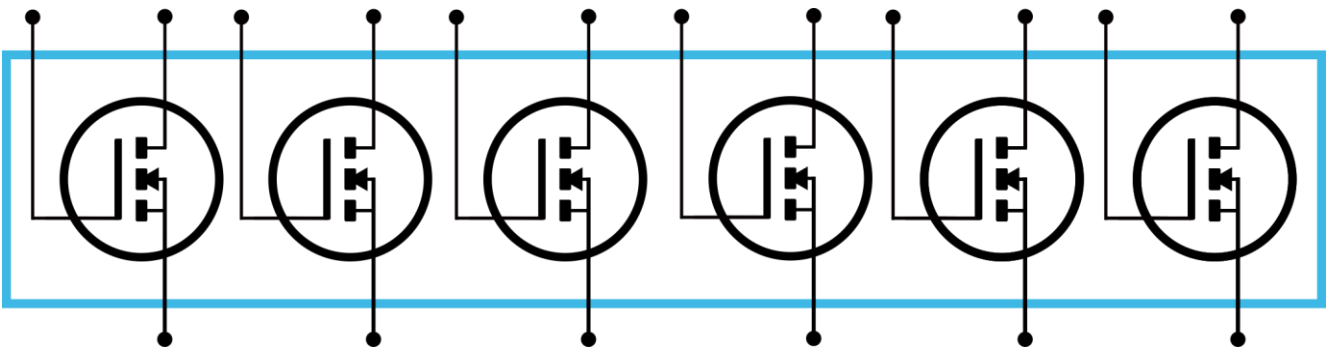
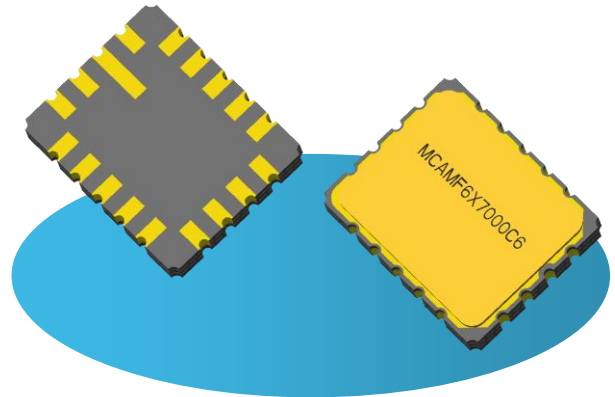


# MULTI CHIP ARRAY 6 x ISOLATED N-CANNEL 2N7000 MOSFET TRANSISTORS MCAMF6X7000C6



- Hermetic MO-042AA (LCC6)
- Low  $R_{ds(on)}$
- 6 N-Channel MOSFET Transistors In An Isolated Array
- High Speed Switching
- High Reliability Screening Options Available



## ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

$V_{DS}$	Drain - Source Voltage		60V
$V_{GS}$	Gate - Source Voltage		$\pm 20\text{V}$
$I_D$	Drain Current		200mA
$I_{DM}$	Pulsed Drain Current		500mA
$P_D^{(1)}$	Power Dissipation	$T_{Sp} = 25^\circ\text{C}$	1.38W
		Derate Above $25^\circ\text{C}$	11.11mW/ $^\circ\text{C}$
	Total Power Dissipation <sup>(2)</sup>	$T_{Sp} = 25^\circ\text{C}$	4.16W
		Derate Above $25^\circ\text{C}$	33.33mW/ $^\circ\text{C}$
$T_J$	Junction Temperature Range		-55 to +150 $^\circ\text{C}$
$T_{stg}$	Storage Temperature Range		-55 to +150 $^\circ\text{C}$

## THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JSP}^{(1)(3)}$	Thermal Resistance, Junction To Solder Pad (Per Device)	90	$^\circ\text{C}/\text{W}$
$R_{\theta JSP}^{(2)(3)}$	Thermal Resistance, Junction To Solder Pad (Package)	30	$^\circ\text{C}/\text{W}$

### Notes

- (1) One device conducting only.
- (2) With all parts conducting, maximum power dissipation per device = 694mW, limited by maximum junction temperature.
- (3) Stated  $R_{\theta JSP}$  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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# MULTI CHIP ARRAY 6 x ISOLATED N-CHANNEL 2N7000 MOSFET TRANSISTORS MCAMF6X7000C6



## 2N7000 ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$V_{(BR)DSS}^{(4)}$	Drain - Source Breakdown Voltage	$I_D = 10\mu\text{A}$ $V_{GS} = 0\text{V}$	60	70		V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 0.25\text{mA}$	0.8		3.0	
$I_{GSS}$	Gate - Body Leakage Current	$V_{GS} = \pm 20\text{V}$ $V_{DS} = 0\text{V}$			$\pm 100$	nA
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = 60\text{V}$ $V_{GS} = 0\text{V}$			1.0	$\mu\text{A}$
		$T_A = 125^\circ\text{C}$			1.0	$\text{mA}$
$I_{D(on)}^{(4)}$	On - State Drain Current	$V_{DS} \geq 2 V_{DS(on)}$ $V_{GS} = 4.5\text{V}$	75			$\text{mA}$
$R_{DS(on)}^{(4)}$	Drain - Source On Resistance	$V_{GS} = 10\text{V}$			5	$\Omega$
		$I_D = 0.5\text{A}$ $T_A = 125^\circ\text{C}$			9	
$V_{DS(on)}^{(4)}$	Drain - Source On Voltage	$V_{GS} = 4.5\text{V}$ $I_D = 75\text{mA}$			0.4	V
		$V_{GS} = 10\text{V}$ $I_D = 0.5\text{A}$			2.5	
$g_{fs}^{(4)}$	Forward Transconductance	$V_{GS} = 10\text{V}$ $I_D = 0.5\text{A}$	100			$\text{mS}$

## 2N7000 DYNAMIC CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

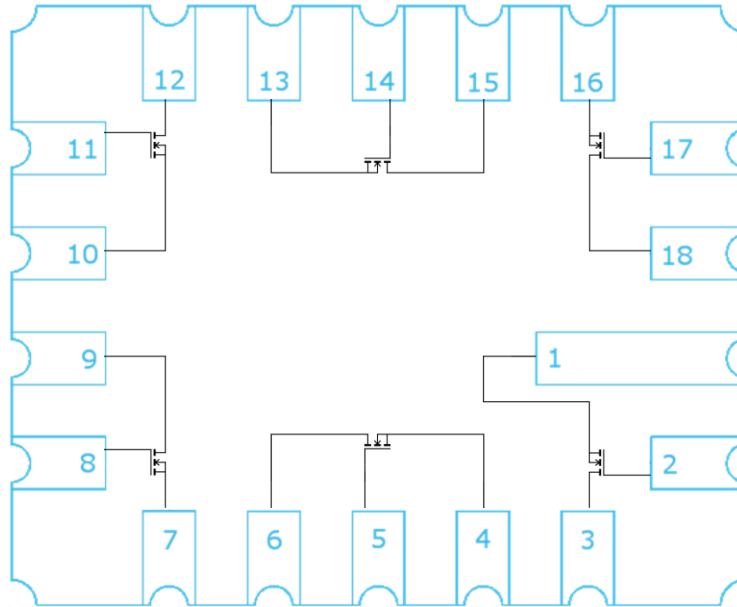
Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$C_{iss}^{(5)}$	Input Capacitance	$V_{DS} = 25\text{V}$ $V_{GS} = 0\text{V}$ $f = 1.0\text{MHz}$			60	$\text{pF}$
$C_{oss}^{(5)}$	Output Capacitance				25	
$C_{rss}^{(5)}$	Reverse Transfer Capacitance				5	
$t_{on}^{(5)}$	Turn - On Time	$V_{DD} = 30\text{V}$ $V_{GEN} = 10\text{V}$ $R_L = 150\Omega$			10	ns
$t_{off}^{(5)}$	Turn - Off Time		$R_G = 25\Omega$ $I_D = 0.2\text{A}$			

### Notes

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

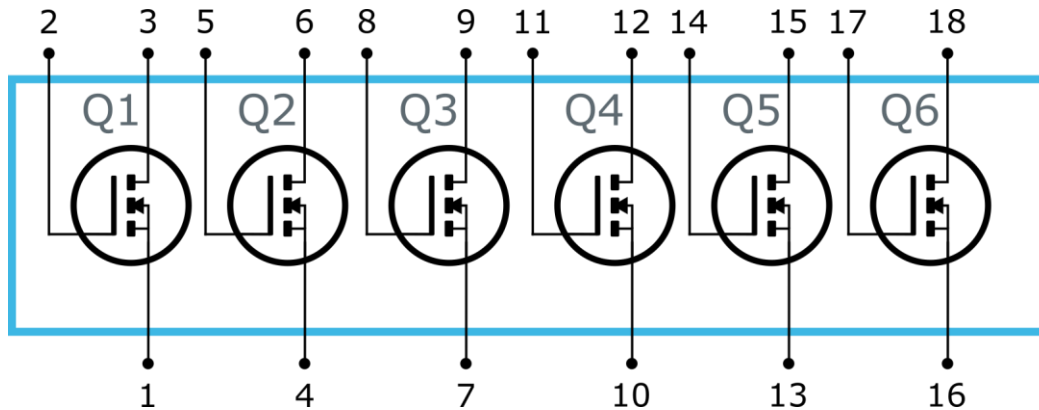
# MULTI CHIP ARRAY 6 x ISOLATED N-CANNEL 2N7000 MOSFET TRANSISTORS MCAMF6X7000C6

## INTERNAL LAYOUT VISUALISATION



(Underside View)

## PACKAGE PIN CONNECTIONS



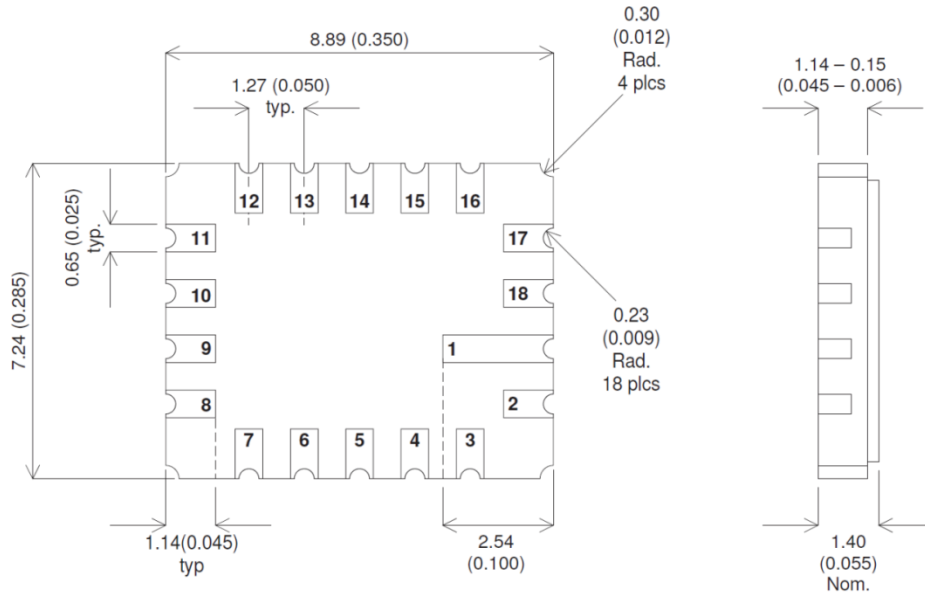
Pin	Device	Connection
1	Q1	Source
2	Q1	Gate
3	Q1	Drain
4	Q2	Source
5	Q2	Gate
6	Q2	Drain
7	Q3	Source
8	Q3	Gate
9	Q3	Drain

Pin	Device	Connection
10	Q4	Source
11	Q4	Gate
12	Q4	Drain
13	Q5	Source
14	Q5	Gate
15	Q5	Drain
16	Q6	Source
17	Q6	Gate
18	Q6	Drain

# MULTI CHIP ARRAY 6 x ISOLATED N-CANNEL 2N7000 MOSFET TRANSISTORS MCAMF6X7000C6

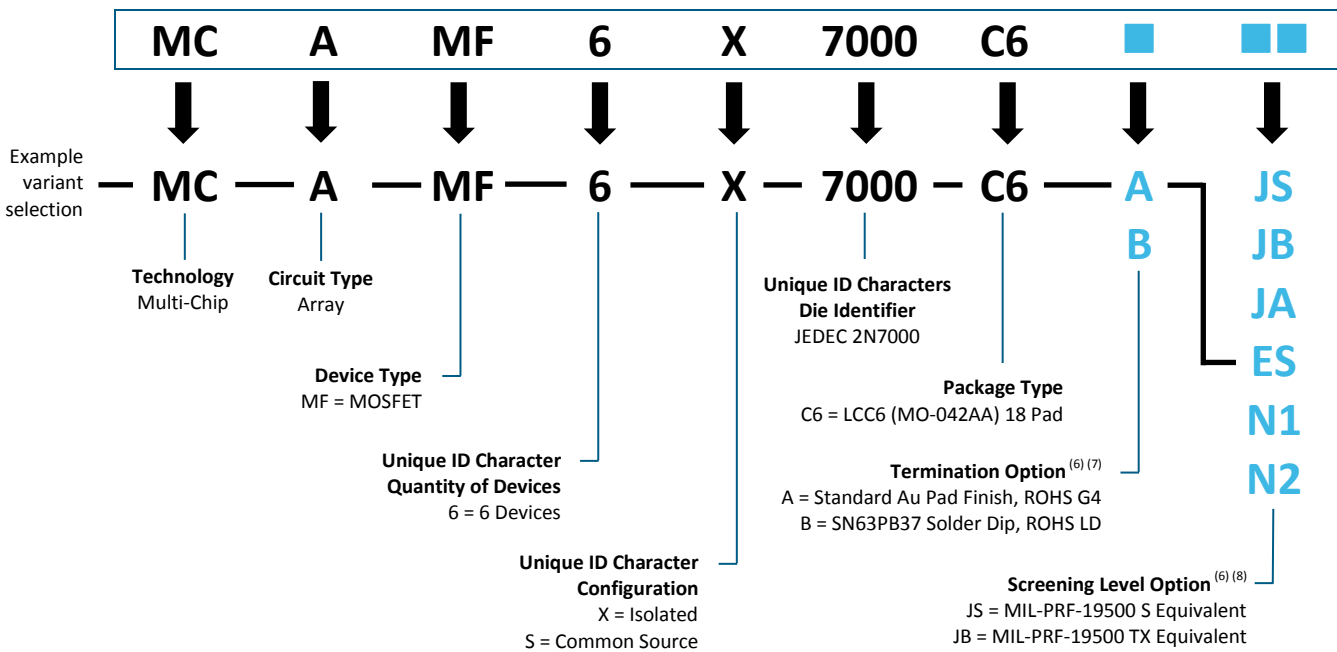
## MECHANICAL DATA

Dimensions in mm (inches)



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

## PART VARIANT OPTIONS <sup>(6)</sup>



## 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).