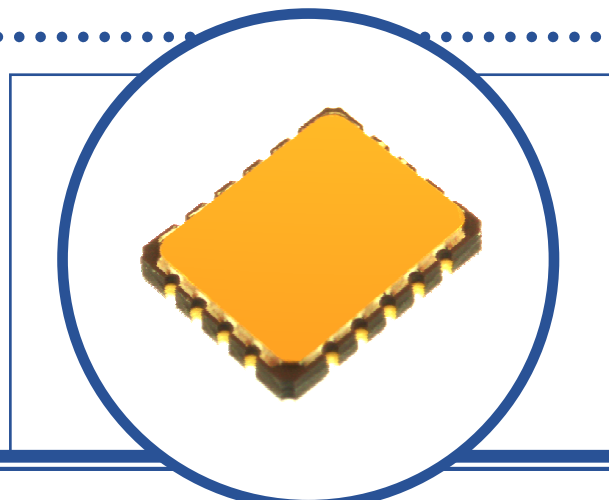


QUAD SILICON PLANAR EPITAXIAL NPN TRANSISTORS

2N2222AQCSM

- High Speed Saturated Switching
- Hermetic Surface Mounted Package.
- Ideally suited for High Speed Switching and General Purpose Applications
- Screening Options Available



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

		Per Device	Total Package
V_{CBO}	Collector – Base Voltage	75V	
V_{CEO}	Collector – Emitter Voltage	50V	
V_{EBO}	Emitter – Base Voltage	6V	
I_C	Continuous Collector Current	800mA	
P_D	Total Power Dissipation at $T_A = 25^\circ\text{C}$ Derate Above 37.5°C	500mW 3.08mW/ $^\circ\text{C}$	2W 12.3mW/ $^\circ\text{C}$
T_J	Junction Temperature Range	-65 to +200 $^\circ\text{C}$	
T_{stg}	Storage Temperature Range	-65 to +200 $^\circ\text{C}$	

THERMAL PROPERTIES (Each Device)

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient			325	$^\circ\text{C/W}$

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.



QUAD SILICON PLANAR EPITAXIAL NPN TRANSISTORS 2N2222AQCSM

ELECTRICAL CHARACTERISTICS (Each Device, $T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	50			V
I_{CBO}	Collector 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
		$V_{EB} = 4\text{V}$ $I_C = 0$			10	nA
I_{CES}	Collector Cut-Off Current	$V_{CE} = 50\text{V}$			50	nA
$V_{CE(sat)}^{(1)}$	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	
$V_{BE(sat)}^{(1)}$	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	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 0.1\text{mA}$ $V_{CE} = 10\text{V}$	50			
		$I_C = 1.0\text{mA}$ $V_{CE} = 10\text{V}$	75		325	
		$I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$	100			
		$T_A = -55^\circ\text{C}$	35			
		$I_C = 150\text{mA}$ $V_{CE} = 10\text{V}$	100		300	
		$I_C = 500\text{mA}$ $V_{CE} = 10\text{V}$	30			

DYNAMIC CHARACTERISTICS

$ h_{fe} $	Small signal forward-current transfer ratio	$I_C = 20\text{mA}$ $V_{CE} = 20\text{V}$ $f = 100\text{MHz}$	2.5			
h_{fe}	Small Signal Current Gain	$I_C = 1.0\text{mA}$ $V_{CE} = 10\text{V}$ $f = 1.0\text{KHz}$	50			
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			8	pF
C_{ibo}	Input Capacitance	$V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			30	
t_{on}	Turn-On Time	$I_C = 150\text{mA}$ $V_{CC} = 30\text{V}$ $I_{B1} = 15\text{mA}$			35	ns
t_{off}	Turn-Off Time	$I_C = 150\text{mA}$ $V_{CC} = 30\text{V}$ $I_{B1} = -I_{B2} = 15\text{mA}$			300	

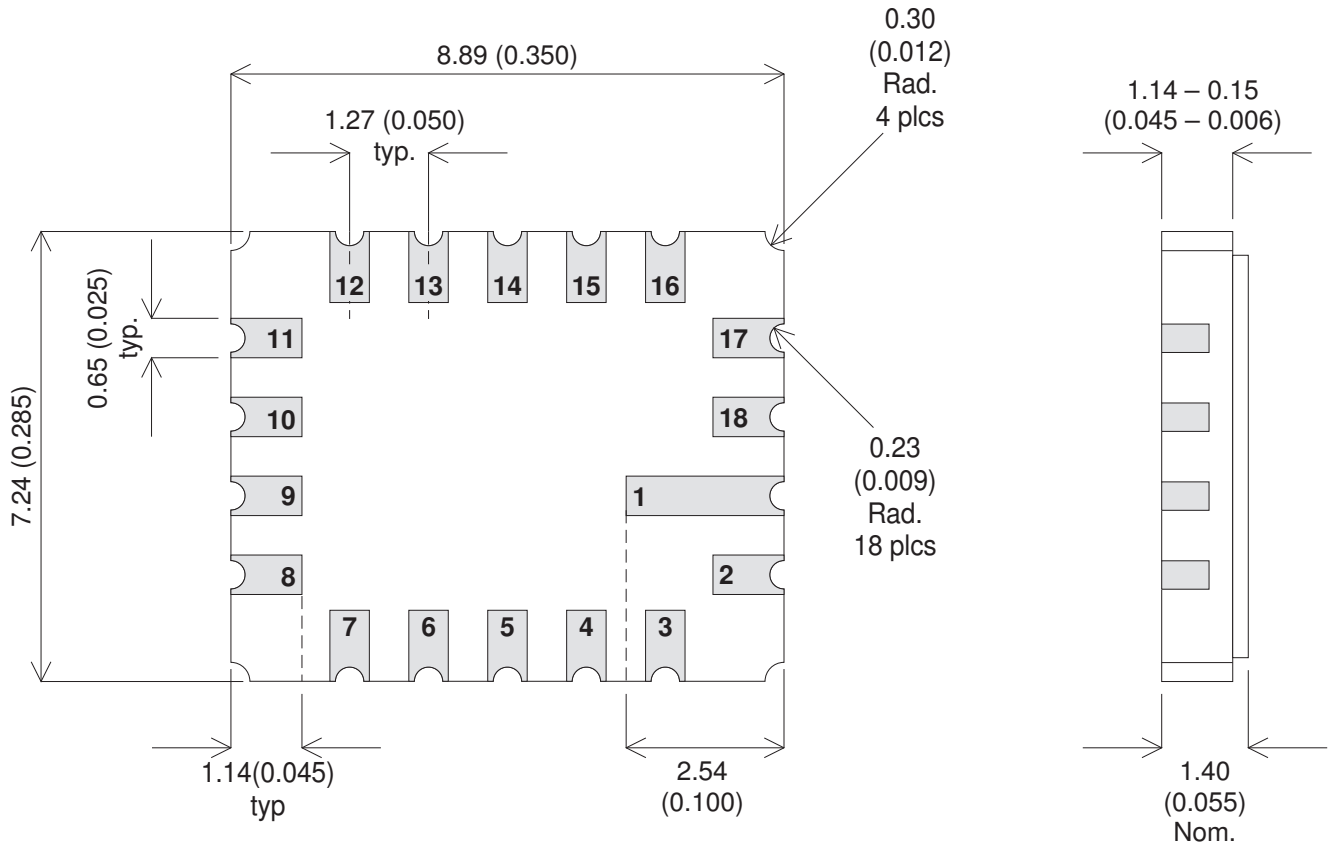
Notes

(1) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

QUAD SILICON PLANAR EPITAXIAL NPN TRANSISTORS 2N2222AQCSM

MECHANICAL DATA

Dimensions in mm (inches)



LCC6 (MO-042AA)

Underside View

Pad 1 – Base 1	Pad 7 – Collector 2	Pad 10 – Base 3	Pad 16 – Collector 4
Pad 2 – Emitter 1	Pad 8 – Emitter 2	Pad 11 – Emitter 3	Pad 17 – Emitter 4
Pad 3 – Collector 1	Pad 9 – Base 2	Pad 12 – Collector 3	Pad 18 – Base 4

Pads 4, 5, 6, 13, 14, 15 – No Connections