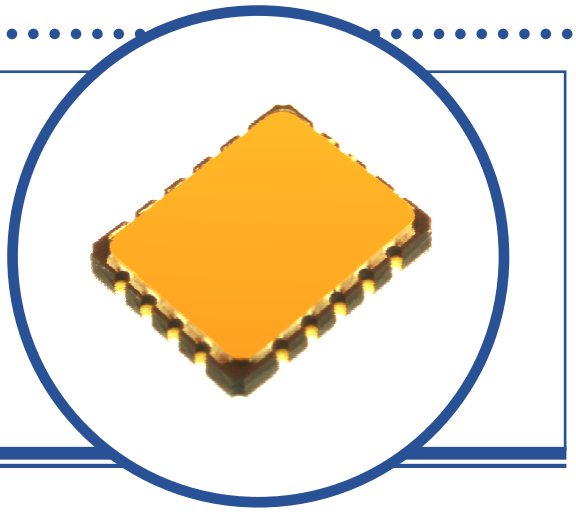
QUAD SILICON PLANAR EPITAXIAL NPN TRANSISTORS

TT electronics
Semelab Limited

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°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°C	500mW	2W
		Derate Above 37.5°C	3.08mW/°C	12.3mW/°C
T_J	Junction Temperature Range		-65 to +200°C	
T_{stg}	Storage Temperature Range		-65 to +200°C	

THERMAL PROPERTIES (Each Device)

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

SEMELAB
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ELECTRICAL CHARACTERISTICS (Each Device, T_A = 25°C unless otherwise stated)

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
$V_{(BR)CEO}$ [1]	Collector-Emitter Breakdown Voltage	I_C = 10mA	I_B = 0	50			V
I_{CBO}	Collector Cut-Off Current	V_{CB} = 75V	I_E = 0			10	µA
		V_{CB} = 60V	I_E = 0			10	nA
			T_A = 150°C			10	µA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 6V	I_C = 0			10	µA
		V_{EB} = 4V	I_C = 0			10	nA
I_{CES}	Collector Cut-Off Current	V_{CE} = 50V				50	nA
$V_{CE(sat)}$ [1]	Collector-Emitter Saturation Voltage	I_C = 150mA	I_B = 15mA			0.3	V
		I_C = 500mA	I_B = 50mA			1.0	
$V_{BE(sat)}$ [1]	Base-Emitter Saturation Voltage	I_C = 150mA	I_B = 15mA	0.6		1.2	
		I_C = 500mA	I_B = 50mA			2	
h_{FE} [1]	Forward-current transfer ratio	I_C = 0.1mA	V_{CE} = 10V	50			
		I_C = 1.0mA	V_{CE} = 10V	75		325	
		I_C = 10mA	V_{CE} = 10V	100			
			T_A = -55°C	35			
		I_C = 150mA	V_{CE} = 10V	100		300	
		I_C = 500mA	V_{CE} = 10V	30			

DYNAMIC CHARACTERISTICS

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

Notes
(1) Pulse Width ≤ 300us, δ ≤ 2%

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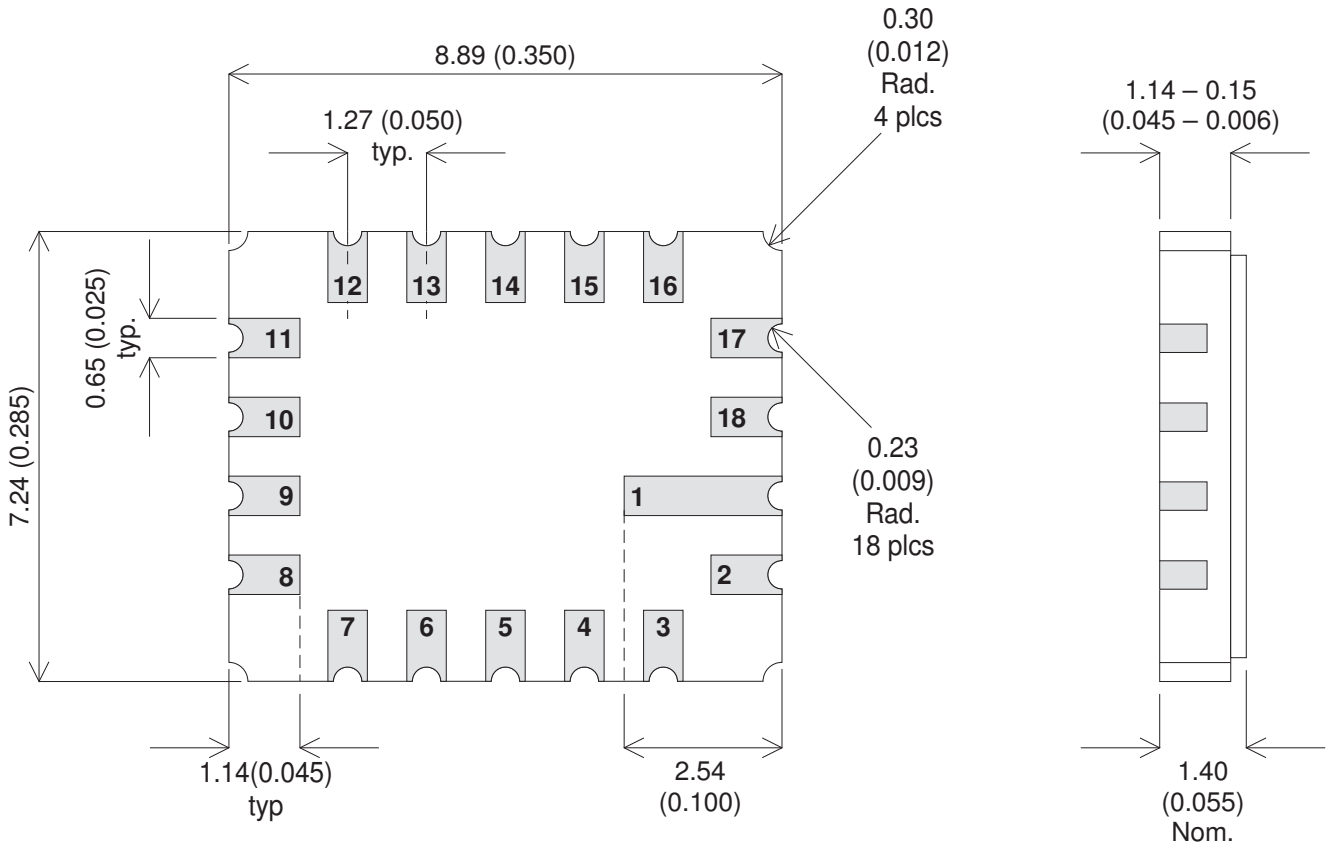
MECHANICAL DATA

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