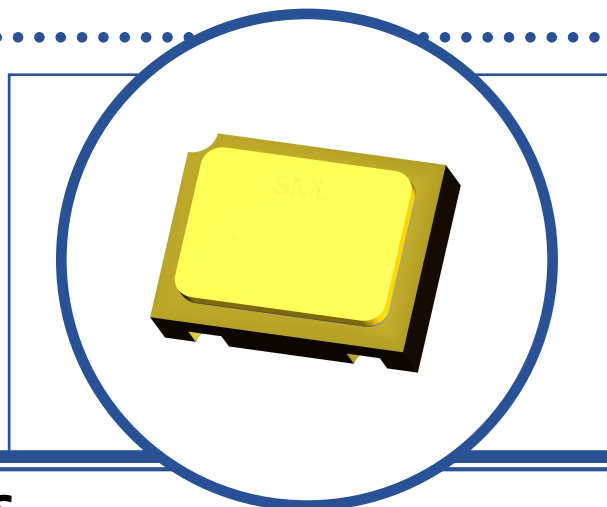


SILICON SWITCHING NPN TRANSISTOR

2N2222ACSM

- High Speed Saturated Switching
- Hermetic Surface Mount Package.
- Screening Options Available



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

V _{CBO}	Collector – Base Voltage	75V
V _{CEO}	Collector – Emitter Voltage	50V
V _{EBO}	Emitter – Base Voltage	6V
I _C	Continuous Collector Current	0.8A
P _D	Total Power Dissipation at T _A = 25°C	500mW
	Derate Above 25°C	2.86mW/°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 _{θJA} ⁽¹⁾	Thermal Resistance, Junction To Ambient	325	°C/W
R _{θJSP(IS)} ⁽²⁾	Thermal resistance junction to solder pads (infinite sink mount to PCB).	90	°C/W

⁽¹⁾ For non-thermal conductive PCB or unknown PCB surface mount conditions in free air

⁽²⁾ Infinite sink mount to PCB

SILICON SWITCHING NPN TRANSISTOR 2N2222ACSM

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

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
V _{(BR)CEO} ⁽³⁾	Collector-Emitter Sustaining Voltage	I _C = 10mA I _B = 0	50			V
I _{CES}	Collector-Emitter Cut-Off Current	V _{CE} = 50V			50	nA
I _{CBO}	Collector-Base Cut-Off Current	I _E = 0 V _{CB} = 75V			10	μA
		I _E = 0 V _{CB} = 60V			10	nA
		T _A = 150°C			10	μA
I _{EBO}	Emitter Cut-Off Current	I _C = 0 V _{EB} = 4V			10	nA
		V _{EB} = 6V			10	μA

ON CHARACTERISTICS

V _{CE(Sat)} ⁽³⁾	Collector-Emitter Saturation Voltage	I _C = 150mA I _B = 15mA			0.3	V
		I _C = 500mA I _B = 50mA			1.0	
V _{BE(Sat)} ⁽³⁾	Base-Emitter Saturation Voltage	I _C = 150mA I _B = 15mA	0.6		1.2	V
		I _C = 500mA I _B = 50mA			2.0	
h _{FE}	DC Current Gain	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 ⁽¹⁾	100		300	
		I _C = 500mA V _{CE} = 10V ⁽¹⁾	30			

SMALL SIGNAL CHARACTERISTICS

C _{obo}	Output Capacitance	V _{CB} = 10V I _E = 0 f = 1.0MHz			8	pF
C _{ibo}	Input Capacitance	V _{EB} = 0.5V I _C = 0 f = 1.0MHz			25	
h _{fe}	Magnitude of small-signal, short-circuit forward current transfer ratio	I _C = 20mA V _{CE} = 20V f = 100MHz	2.5			-
h _{fe}	Small Signal Current Gain	I _C = 1.0mA V _{CE} = 10V f = 1.0kHz	50			-

⁽³⁾ Pulse Width ≤ 300us, δ ≤ 2%

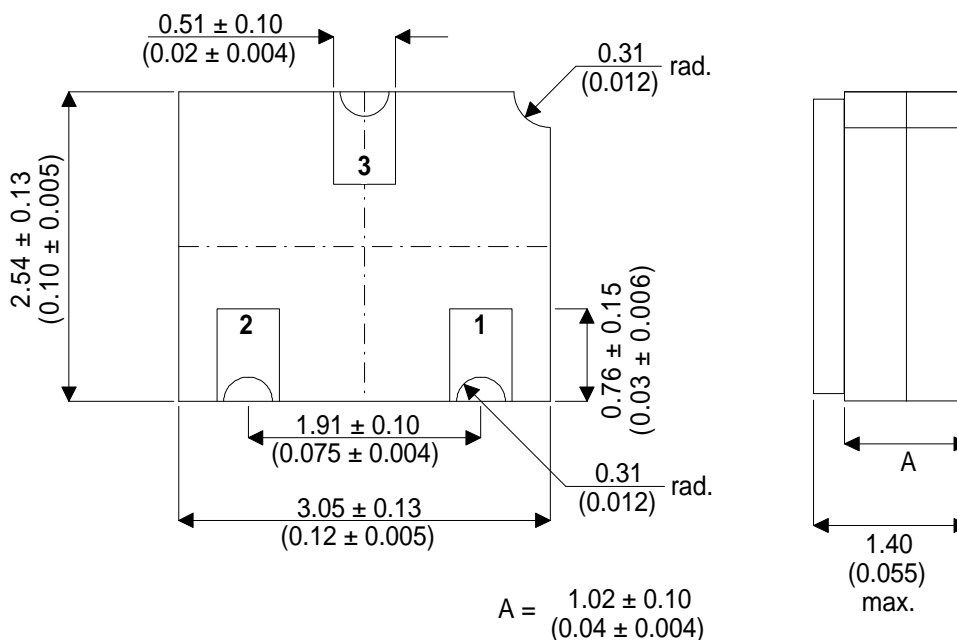
SILICON SWITCHING NPN TRANSISTOR 2N2222ACSM

SWITCHING CHARACTERISTICS

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
t_{on}	Saturated Turn-on Time	$V_{CC} = 30V$ $I_{B1} = 15mA$			35	ns
t_{off}	Saturated Turn-off Time	$I_C = 150mA$			300	

MECHANICAL DATA

Dimensions in mm (inches)



LCC1

Underside View

Pad 1 - Base

Pad 2 - Emitter

Pad 3 - Collector