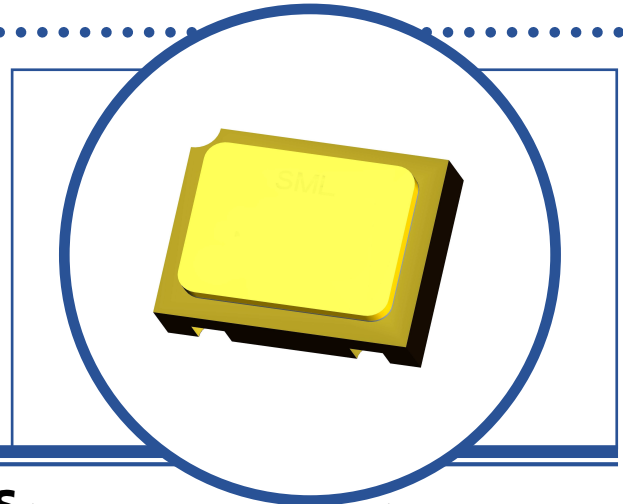


SILICON SWITCHING NPN TRANSISTOR

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

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
$V_{(BR)CEO}^{(3)}$	Collector-Emitter Sustaining Voltage	$I_C = 10\text{mA}$ $I_B = 0$	50			V
I_{CES}	Collector-Emitter Cut-Off Current	$V_{CE} = 50\text{V}$			50	nA
I_{CBO}	Collector-Base Cut-Off Current	$I_E = 0$ $V_{CB} = 75\text{V}$			10	μA
		$I_E = 0$ $V_{CB} = 60\text{V}$			10	nA
		$T_A = 150^\circ\text{C}$			10	μA
I_{EBO}	Emitter Cut-Off Current	$I_C = 0$ $V_{EB} = 4\text{V}$			10	nA
		$V_{EB} = 6\text{V}$			10	μA

ON CHARACTERISTICS

$V_{CE(Sat)}^{(3)}$	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	
$V_{BE(Sat)}^{(3)}$	Base-Emitter Saturation Voltage	$I_C = 150\text{mA}$ $I_B = 15\text{mA}$	0.6		1.2	V
		$I_C = 500\text{mA}$ $I_B = 50\text{mA}$			2.0	
h_{FE}	DC Current Gain	$I_C = 0.1\text{mA}$ $V_{CE} = 10\text{V}$	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			
		$I_C = 150\text{mA}$ $V_{CE} = 10\text{V}^{(1)}$	100		300	
		$I_C = 500\text{mA}$ $V_{CE} = 10\text{V}^{(1)}$	30			

SMALL SIGNAL CHARACTERISTICS

C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			8	pF
C_{ibo}	Input Capacitance	$V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			25	
$ h_{fe} $	Magnitude of small-signal, short-circuit 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			-

⁽³⁾ Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

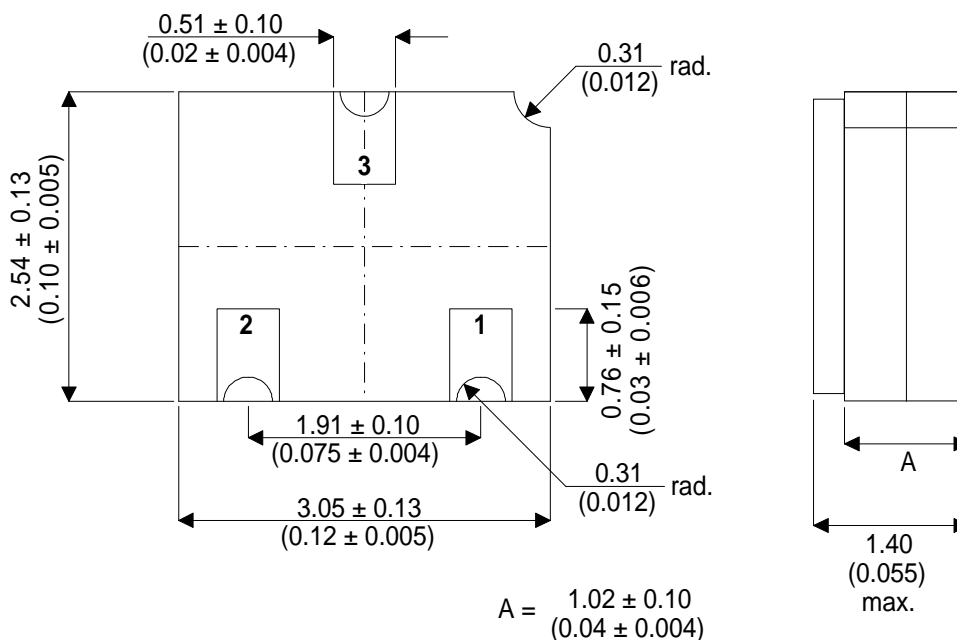
SILICON SWITCHING NPN TRANSISTOR 2N2222ACSM

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