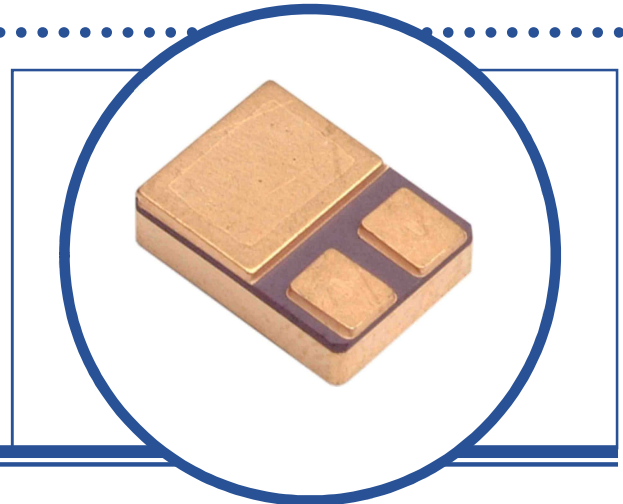


# NPN POWER SILICON SWITCHING TRANSISTOR

## 2N5667N1

- Hermetic SMD0.5 Ceramic Surface Mount.
- Ideally Suited for Power Amplifier and Switching Applications.
- Screening Options Available



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

$V_{CBO}$	Collector – Base Voltage	400V
$V_{CEO}$	Collector – Emitter Voltage	300V
$V_{EBO}$	Emitter – Base Voltage	6V
$I_C$	Continuous Collector Current	5A
$I_B$	Base Current	1.0A
$P_D$	Total Power Dissipation at $T_C = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$	54W 0.43W/ $^\circ\text{C}$
$T_J$	Junction Temperature Range	-65 to $+150^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-65 to $+150^\circ\text{C}$

### THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case - $T_C = 25^\circ\text{C}$	2.3	$^\circ\text{C/W}$

Semelab plc 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 an order.

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

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units	
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 1.0\text{mA}$ $I_B = 0$	300			V	
$V_{(BR)EBO}^{(1)}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}$ $I_C = 0$	6				
$I_{CER}$	Collector-Emitter Cut-Off Current	$V_{CE} = 400\text{V}$ $R_{BE} = 100\Omega$			100	$\mu\text{A}$	
$I_{CES}$	Collector-Emitter Cut-Off Current	$V_{CE} = 300\text{V}$			1.0		
		$T_A = 150^\circ\text{C}$			100		
$I_{CBO}$	Collector-Base Cut-Off Current	$V_{CB} = 300\text{V}$			1.0	mA	
		$V_{CB} = 400\text{V}$			1.0		
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 500\text{mA}$ $V_{CE} = 2\text{V}$	25			-	
		$I_C = 1.0\text{A}$	$V_{CE} = 5\text{V}$	25			80
			$T_A = -55^\circ\text{C}$	10			
		$I_C = 3\text{A}$ $V_{CE} = 5\text{V}$	10				
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 3\text{A}$ $I_B = 0.6\text{A}$			0.4	V	
		$I_C = 5\text{A}$ $I_B = 1.0\text{A}$			1.0		
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 3\text{A}$ $I_B = 0.6\text{A}$			1.2		
		$I_C = 5\text{A}$ $I_B = 1.0\text{A}$			1.5		

## DYNAMIC CHARACTERISTICS

$ h_{fe} $	Magnitude of Common-Emitter Small-Signal Short-Circuit forward Current, Transfer Ratio	$I_C = 0.5\text{A}$ $V_{CE} = 5\text{V}$ $f = 10\text{MHz}$	2		7	-
$C_{obo}$	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			120	pF
$t_{on}$	Turn-On Time	$I_C = 1.0\text{A}$ $V_{CC} = 100\text{V}$ $I_{B1} = -I_{B2} = 50\text{mA}$			0.4	$\mu\text{s}$
$t_{off}$	Turn-Off Time				2.5	

### Notes

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

