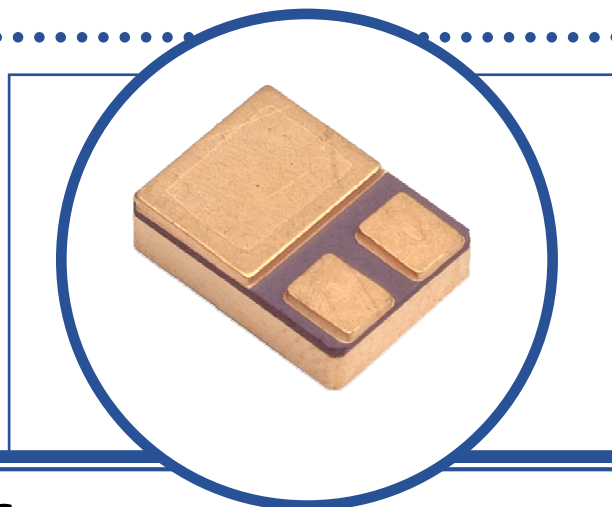


NPN SILICON SWITCHING TRANSISTOR

2N5785N1

- Hermetic SMD0.5 Metal package.
- Ideally Suited for Linear Amplifier and Switching Applications.
- Screening Options Available



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

V _{CBO}	Collector – Base Voltage	65V
V _{CEO}	Collector – Emitter Voltage	50V
V _{EBO}	Emitter – Base Voltage	5V
I _C	Continuous Collector Current	3.5A
I _B	Base Current	1.0A
P _D	Total Power Dissipation at T _C = 25°C Derate Above 25°C	25W 0.2W/°C
T _J	Junction Temperature Range	-65 to +150°C
T _{stg}	Storage Temperature Range	-65 to +150°C

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
R _{θJC}	Thermal Resistance, Junction To Case			5	°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.



NPN SILICON SWITCHING TRANSISTOR 2N5785N1

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CER}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 100\mu\text{A}$ $R_{BE} = 100\Omega$	65			V
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$	50			
I_{CER}	Collector Cut-Off Current	$V_{CE} = 50\text{V}$ $R_{BE} = 100\Omega$			10	μA
		$T_C = 150^\circ\text{C}$			1.0	mA
I_{CEX}	Collector Cut-Off Current	$V_{BE} = -1.5\text{V}$ $V_{CE} = 60\text{V}$			10	μA
		$T_C = 150^\circ\text{C}$			1.0	mA
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 35\text{V}$ $I_B = 0$			100	μA
I_{EBO}	Emitter Cut-Off Current	$V_{BE} = -5\text{V}$ $I_C = 0$			10	
$h_{FE}^{(1)}$	DC Forward-current transfer ratio	$V_{CE} = 2\text{V}$	$I_C = 1.2\text{A}$	20	100	-
			$I_C = 3.2\text{A}$	4		
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 1.2\text{A}$ $I_B = 0.12\text{A}$			0.75	V
		$I_C = 3.2\text{A}$ $I_B = 0.8\text{A}$			2	
V_{BE}	Base-Emitter Voltage	$I_C = 1.2\text{A}$ $V_{CE} = 2\text{V}$			1.5	

DYNAMIC CHARACTERISTICS

$ h_{fe} $	Magnitude of Common-Emitter Small-Signal Short-Circuit forward Current, Transfer Ratio	$I_C = 0.1\text{A}$ $V_{CE} = 2\text{V}$ $f = 4\text{MHz}$	5		25	-
t_{on}	Turn-On Time	$I_C = 1.0\text{A}$ $V_{CC} = 30\text{V}$			5	μs
t_{off}	Turn-Off Time	$I_{B1} = I_{B2} = 0.1\text{A}$			15	

Notes

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

