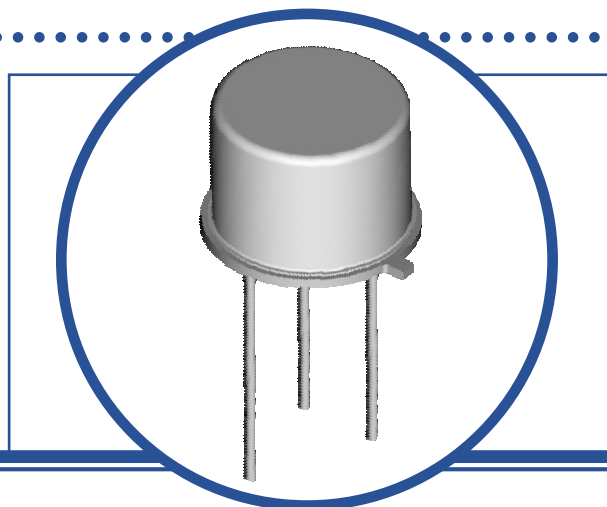


SILICON NPN TRANSISTOR

2N5786

- Low Saturation Voltage. High Gain At High Current.
- Hermetic TO39 (TO-205AD) Metal Package.
- Ideally suited for General Purpose Amplifier Applications.
- High Reliability and Space Screening Options Available.



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

V_{CBO}	Collector – Base Voltage		45V
V_{CER}	Collector – Emitter Voltage	$R_{BE} = 100\Omega$	45V
V_{CEO}	Collector – Emitter Voltage		40V
V_{EBO}	Emitter – Base Voltage		3.5V
I_C	Continuous Collector Current		3.5A
I_B	Base Current		1.0A
P_D	Total Power Dissipation at	$T_A = 25^\circ\text{C}$	1.0W
		Derate Above 25°C	5.71mW/ $^\circ\text{C}$
P_D	Total Power Dissipation at	$T_C = 25$	10W
		Derate Above 25°C	57.14mW/ $^\circ\text{C}$
T_J	Junction Temperature Range		-65 to +200 $^\circ\text{C}$
T_{stg}	Storage Temperature Range		-65 to +200 $^\circ\text{C}$

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	17.5	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	175	$^\circ\text{C/W}$

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.



SILICON NPN TRANSISTOR 2N5786

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
V _{(BR)CEO} ⁽¹⁾	Collector-Emitter Breakdown Voltage	I _C = 100mA I _B = 0	40			V
V _{(BR)CER} ⁽¹⁾	Collector-Emitter Breakdown Voltage	I _C = 100mA R _{BE} = 100Ω	45			
I _{CER}	Collector Cut-Off Current	V _{CE} = 40V R _{BE} = 100Ω			10	μA
		T _C = 150°C			1.0	mA
I _{CEX}	Collector Cut-Off Current	V _{CE} = 45V V _{BE} = -1.5V			10	μA
		T _C = 150°C			1.0	mA
I _{CEO}	Collector Cut-Off Current	V _{CE} = 25V I _B = 0			100	μA
I _{EBO}	Emitter Cut-Off Current	V _{EB} = 3.5V I _C = 0			10	
h _{FE} ⁽¹⁾	Forward-current transfer ratio	I _C = 1.6A	V _{CE} = 2V	20	100	
		I _C = 3.2A		4		
V _{BE} ⁽¹⁾	Base-Emitter Voltage	I _C = 1.6A V _{CE} = 2V			1.5	V
V _{CE(sat)} ⁽¹⁾	Collector-Emitter Saturation Voltage	I _C = 1.6A I _B = 0.16A			1.0	
		I _C = 3.2A I _B = 0.8A			2	

DYNAMIC CHARACTERISTICS

h _{fe}	Magnitude of common-emitter, small-signal short-circuit, forward-current transfer ratio	I _C = 100mA V _{CE} = 2V f = 4MHz	5		20	
h _{fe}	Small-Signal Current Gain	I _C = 100mA V _{CE} = 2V f = 1.0 KHz	25			-
t _{on}	Turn-On Time	I _C = 1.0A V _{CC} = 30V I _{B1} = 0.1A			5	μS
t _{off}	Turn-Off Time	I _C = 1.0A V _{CC} = 30V I _{B1} = - I _{B2} = 0.1A			15	

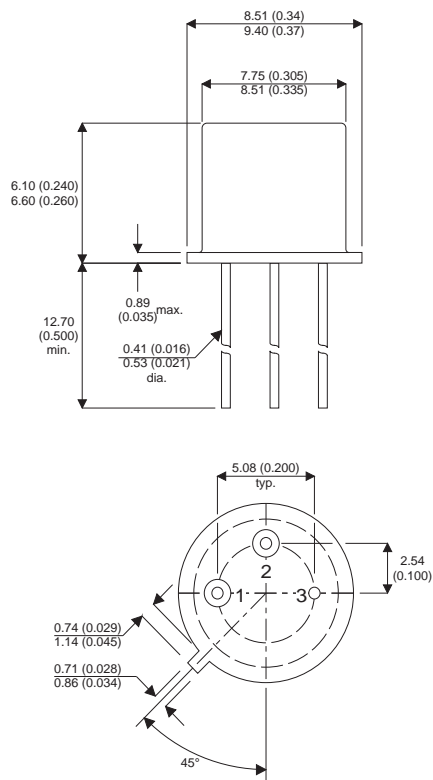
Notes

(1) Pulse Width ≤ 380us, δ ≤ 2%

SILICON NPN TRANSISTOR 2N5786

MECHANICAL DATA

Dimensions in mm (inches)



TO-39 (TO-205AD) METAL PACKAGE Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector