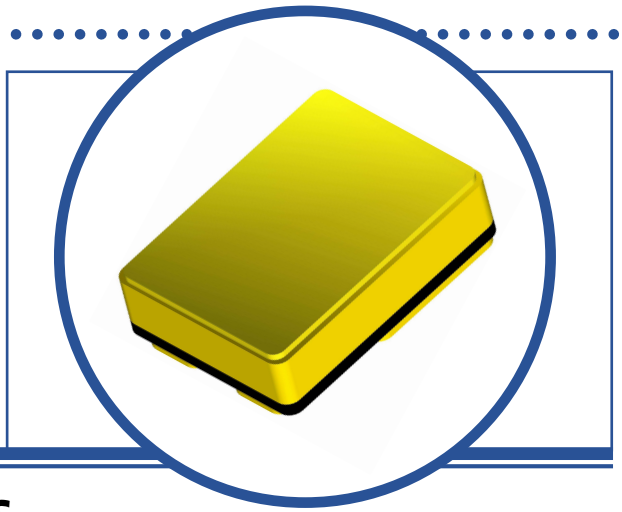
SILICON
NPN TRANSISTOR

TT electronics
Semelab Limited

2N2891SMD05



- $V_{(BR)CEO}$ = 80V (Min).
- Hermetic Ceramic Surface Mount Package
- Ideally Suited For Low Frequency Large Signal Applications (High Voltage).
- Screening Options Available

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

V_{CBO}	Collector – Base Voltage		100V
V_{CEO}	Collector – Emitter Voltage		80V
V_{EBO}	Emitter – Base Voltage		5V
I_C	Continuous Collector Current		3A
I_{CM}	Peak Collector Current		5A
I_B	Base Current		0.5A
P_D	Total Power Dissipation at	T_A = 25°C	0.8W
		Derate Above 25°C	4.57mW/°C
P_D	Total Power Dissipation at	T_C = 25°C	35W
		Derate Above 25°C	200mW/°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
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	218.75	°C/W
$R_{\theta JC}$	Thermal Resistance, Junction To Case	5	°C/W

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

Symbols	Parameters	Test Conditions		Min.	Typ	Max.	Units
$V_{(BR)CEO}$ [1]	Collector-Emitter Breakdown Voltage	I_C = 10mA	I_B = 0	80			V
$V_{(BR)CBO}$ [1]	Collector-Base Breakdown Voltage	I_C = 0.1mA	I_E = 0	100			
I_{CEO}	Collector Cut-Off Current	V_{CE} = 60V	I_B = 0			50	µA
I_{CEX}	Collector Cut-Off Current	V_{CE} = 60V	V_{BE} = -2V			0.1	
			T_A = 150°C			100	
		V_{CE} = 90V	V_{BE} = -2V			100	
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 5V	I_C = 0			10	
h_{FE} [1]	Forward-current transfer ratio	I_C = 100mA	V_{CE} = 2V	35			
		I_C = 1.0A	V_{CE} = 2V	50		150	
		I_C = 2A	V_{CE} = 5V	40			
$V_{CE(sat)}$ [1]	Collector-Emitter Saturation Voltage	I_C = 1.0A	I_B = 100mA			0.5	V
		I_C = 2A	I_B = 200mA			0.75	
$V_{BE(sat)}$ [1]	Base-Emitter Saturation Voltage	I_C = 1.0A	I_B = 100mA			1.2	
		I_C = 2A	I_B = 200mA			1.3	

DYNAMIC CHARACTERISTICS

h_{fe}	Small-Signal Current Gain	I_C = 50mA f = 1.0KHz	V_{CE} = 10V	50		350	
f_T	Transition Frequency	I_C = 200mA f = 20MHz	V_{CE} = 10V	30			MHz
C_{obo}	Output Capacitance	V_{CB} = 10V f = 1.0MHz	I_E = 0		70	100	pF
t_{on}	Turn-On Time	I_C = 1.0A I_{B1} = 50mA	V_{CC} = 20V			0.3	µs
t_{off}	Turn-Off Time	I_C = 1.0A I_{B1} = 50mA	V_{CC} = 20V I_{B2} = -50mA			1.5	

Notes
(1) Pulse Width ≤ 380us, δ ≤ 2%

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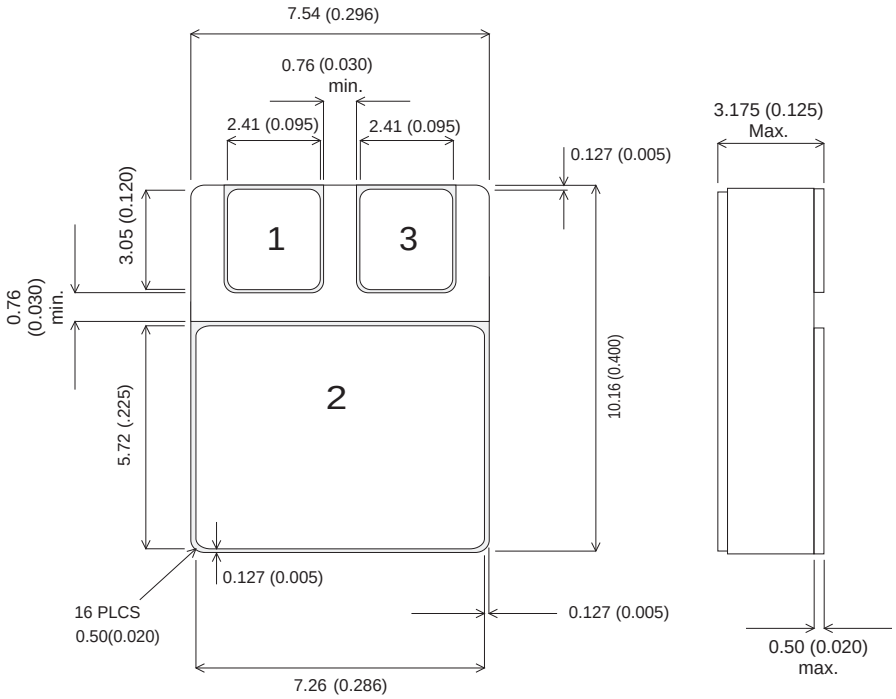
MECHANICAL DATA

Dimensions in mm (inches)



SMD05 (TO-276AA)

Underside View

Pad 1 – Base Pad 2 – Collector Pad 3 - Emitter