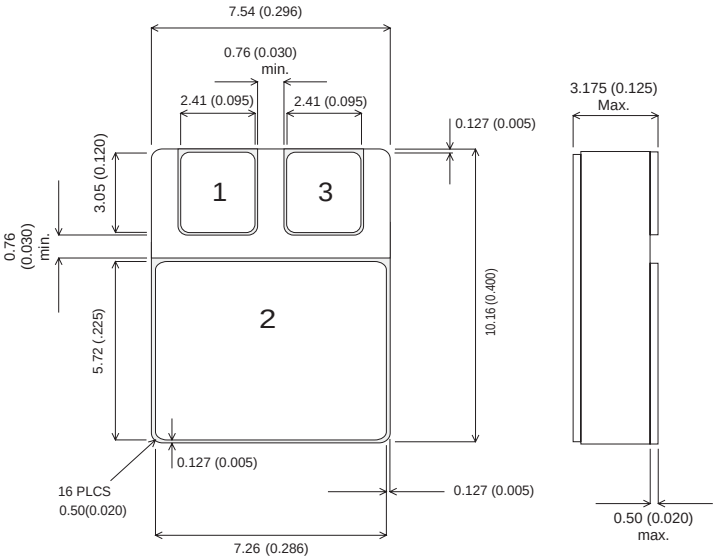
2N6385SMD05

MECHANICAL DATA
Dimensions in mm (inches)

SILICON POWER NPN DARLINGTON TRANSISTOR



FEATURES

- **High Gain Darlington Performance**

APPLICATIONS

- **Audio Amplifiers**
- **Hammer Drivers**
- **Shunt and Series Regulators**

SMD05 (TO-276AA)

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

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{CEO}	Collector – Emitter Voltage	80V
V_{CEX}	Collector – Emitter Voltage	80V
V_{CBO}	Collector – Base Voltage	80V
V_{EBO}	Emitter – Base Voltage	5V
I_C	Continuous Collector Current	10A
I_{CM}	Peak Collector Current	15A
I_B	Base Current - Continuous	0.25A
P_{tot}	Total Dissipation at T_{case} = 25°C	100W
	Derate above 25°C	0.571W/°C
T_{STG} , T_J	Operating and Storage Junction Temperature Range(2)	–65 to +200°C

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.
E-mail: sales@semelab.co.uk Website: http://www.semelab.co.uk

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ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
	OFF CHARACTERISTICS						
$V_{CEO(BR)}$*	Collector – Emitter Breakdown Voltage	I_C = 200mA	I_B = 0	80			V
I_{CEO}	Collector Cut–off Current	V_{CE} = 80V	I_B = 0			1.0	mA
I_{CEV}	Collector Cut–off Current	V_{CE} = $V_{CEO(BR)}$	$V_{BE(off)}$ = 1.5V			0.3	mA
			T_C = 150°C			3.0	
I_{EBO}	Emitter Cut–off Current	V_{EB} = 5V	I_C = 0			10	mA
$V_{CER(BR)}$	Collector–Emitter Breakdown Voltage*	R_{EB} =100Ω	I_C = 200mA			80	V
$V_{CEV(BR)}$	Collector–Emitter Breakdown Voltage*	$V_{BE(off)}$ = 1.5V	I_C = 200mA			80	
	ON CHARACTERISTICS						
h_{FE}	DC Current Gain	V_{CE} = 3V	I_C = 5A	1000		20000	—
		V_{CE} = 3V	I_C = 10A	100			
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage	I_C = 5A	I_B = 0.01A			2.0	V
		I_C = 10A	I_B = 0.1A			3.0	
$V_{BE(on)}$	Base – Emitter On Voltage	V_{CE} = 3V	I_C = 5A			2.8	V
		V_{CE} = 3V	I_C = 10A			4.5	
V_F	Diode Forward Voltage	I_F = 10A				4.0	V
	DYNAMIC CHARACTERISTICS						
C_{ob}	Output Capacitance	V_{CB} =10V	I_E = 0 f_{test}= 1.0MHz			200	pF
$\|h_{fe}\|$	*Magnitude of Common Emitter Small Signal Short-Circuit	V_{CE} = 5V	I_C = 1.0A f = 1.0KHz	20			—
h_{fe}	Common Emitter Small Signal Short-Circuit Forward	V_{CE} = 5V	I_C = 1.0A f = 1.0KHz	1000			—
	SECOND BREAKDOWN						
$E_{s/b}$	Energy with Base-Reverse Biased	L =12mH $V_{BE(off)}$ = 1.5V	R_{BE} = 100Ω I_C = 4.5A	120			mJ

* Pulse test t_p = 300µs , Duty Cycle ≤ 2%

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