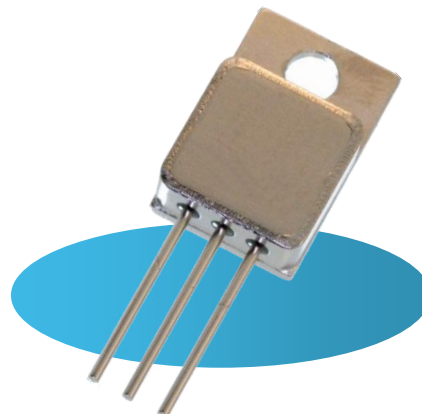


N-Channel Enhancement Mode Power MOSFET

SIMFSZN2106M1

- Hermetic Metal TO-257AA Package
- $V_{DS} = 60V$, $I_D = 1.0A$, $R_{DS(ON)} = 4.0\Omega$
- Fast Switching, Low C_{ISS}
- Integral Source-Drain Body Diode
- High Reliability and Screening options available
- Termination Finish Options



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

V_{DS}	Drain - Source Voltage	60V
V_{GS}	Gate - Source Voltage	$\pm 20V$
I_D	Continuous Drain Current ⁽¹⁾ $T_C = 25^\circ C$	1.0A
P_D	Total Power Dissipation at $T_J = 25^\circ C$	8.33 W
P_D	Derate Above $25^\circ C$	66.7 mW/ $^\circ C$
T_J	Operating Junction Temperature	150 $^\circ C$
T_{stg}	Storage Temperature Range	-55 to +150 $^\circ C$

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JC}$	Thermal Resistance, Junction To Case	15	$^\circ C/W$

Notes

- (1) Limited by maximum junction temperature
- (2) Pulse Width $\leq 10 \mu s$, $\delta \leq 1\%$
- (3) Pulse Width $\leq 380 \mu s$, $\delta \leq 2\%$
- (4) Indicative by design, not a production test

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.

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

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 1.0\text{mA}$	60			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 1.0\text{mA}$	0.8		2.4	V
		$T_C = 125^\circ\text{C}$	0.25			
		$T_C = -55^\circ\text{C}$			2.84	
I_{GSS}	Gate-Source Leakage Current	$V_{GS} = \pm 20\text{V}$ $V_{DS} = 0\text{V}$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 48\text{V}$ $V_{GS} = 0$			1.0	μA
		$T_C = 125^\circ\text{C}$			100	
$I_{D(ON)}^{(3)}$	On-State Drain Current	$V_{DS} = 25\text{V}$ $V_{GS} = 10\text{V}$	0.6			A
$R_{DS(on)}^{(3)}$	Static Drain-Source On-State Resistance	$V_{GS} = 5\text{V}$ $I_D = 75\text{mA}$			6	Ω
		$V_{GS} = 10\text{V}$ $I_D = 500\text{mA}$			4	
		$T_C = 125^\circ\text{C}$			5	
$g_{fs}^{(3)}$	Forward Transconductance	$V_{DS} = 25\text{V}$ $I_D = 500\text{mA}$	150			$\text{m}\Omega$
$V_{SD}^{(3)}$	Body Diode Forward Voltage	$V_{GS} = 0$ $I_S = 600\text{mA}$			1.8	V
$t_{rr}^{(3)}$	Body Diode Reverse Recovery	$V_{GS} = 0$ $I_S = 600\text{mA}$		400		ns

DYNAMIC CHARACTERISTICS

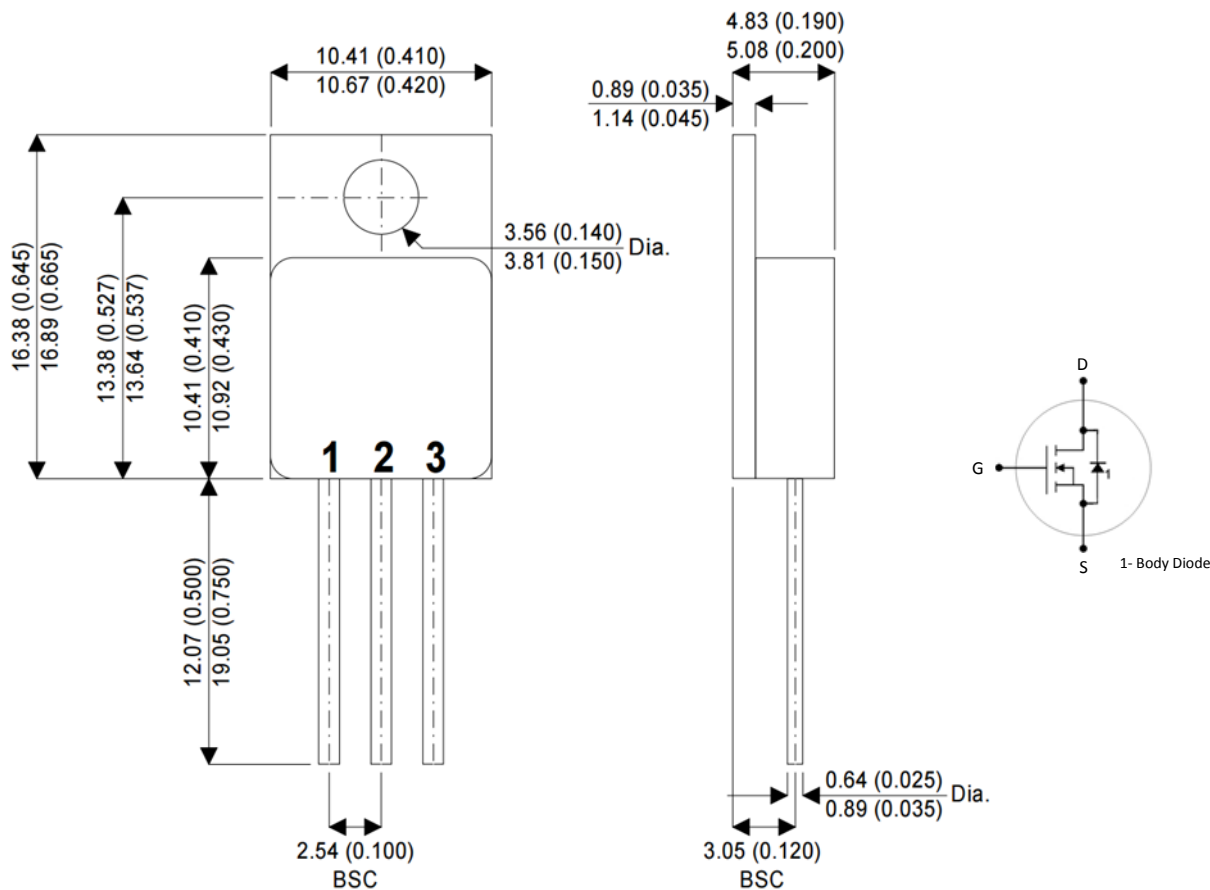
C_{iss}	Input Capacitance	$V_{GS} = 0$		53	65	pF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$		29	40	
C_{rss}	Reverse Transfer Capacitance	$f = 1.0\text{MHz}$		8.5	15	
$t_r^{(4)}$	Rise Time	$V_{DD} = 25\text{V}$ $I_D = 600\text{mA}$ $R_G = 25\Omega$		5		ns
$t_{d(on)}^{(4)}$	Turn - On Delay Time			5	10	
$t_f^{(4)}$	Fall Time			3		
$t_{d(off)}^{(4)}$	Turn-Off Delay Time			8	10	

N-Channel Enhancement
Mode Power MOSFET
SIMFSZN2106M1



MECHANICAL DATA

Dimensions in mm (inches)



TO-257AA

Pin 1 – Source Pin 2 – Gate Pin 3 – Drain Case – Isolated

PART NUMBER VARIANTS

Part Number Reference	Termination Finish
SIMFSZN2106M1A	Standard Finish – Pre-tinned 63% Tin, 37% Lead
SIMFSZN2106M1B	Lead Free Finish – Pre-tinned 96.5% Tin, 3% Silver, 0.5% Copper (SAC305)

Notes:

1. Specify lead finish option by part number at point of order
2. All design variants contain Lead (Pb) within the construction of the device. The Lead content is fully RoHS compliant but using an exemption as currently understood from the EU directive 2011/65/EU (Annex III, exemption 7a).