

100V N-Channel MOSFET

Product Summary

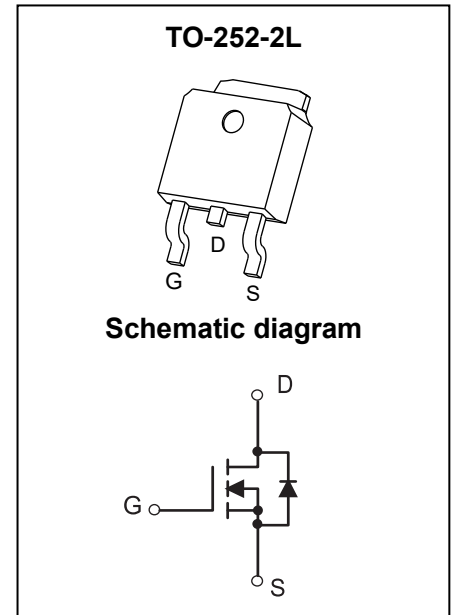
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	185m Ω @10V	8A
	195m Ω @4.5V	

Feature

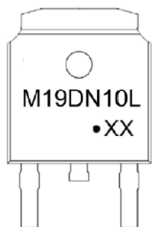
- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested
- 100% ΔV_{DS} Tested

Application

- Power Switching Application



MARKING:



M19DN10L = Device Code
 XX = Date Code
 Solid Dot = Green Indicator

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

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	100	V
Gate - Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹	$T_C = 25^\circ\text{C}$	I_D	8
	$T_C = 100^\circ\text{C}$	I_D	5
Pulsed Drain Current ²	I_{DM}	32	A
Single Pulsed Avalanche Current ³	I_{AS}	5	A
Single Pulsed Avalanche Energy ³	E_{AS}	6	mJ
Power Dissipation ⁵	$T_C = 25^\circ\text{C}$	P_D	30
Thermal Resistance from Junction to Ambient ⁶	$R_{\theta JA}$	62	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	4.2	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics⁴						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.6	3	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 3A$		185	280	m Ω
		$V_{GS} = 4.5V, I_D = 3A$		195	300	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$		444		pF
Output Capacitance	C_{oss}			19		
Reverse Transfer Capacitance	C_{rss}			14		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		1.9		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 50V, V_{GS} = 10V, I_D = 3A$		13		nC
Gate-source Charge	Q_{gs}			1.5		
Gate-drain Charge	Q_{gd}			3.4		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 50V, V_{GS} = 10V, I_D = 5A$ $R_G = 3\Omega$		13		ns
Turn-on Rise Time	t_r			46		
Turn-off Delay Time	$t_{d(off)}$			15		
Turn-off Fall Time	t_f			11		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V_{SD}	$V_{GS} = 0V, I_S = 10A$			1.2	V

Notes :

- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.EAS condition: $V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH, R_G = 25\Omega$ Starting $T_J = 25^\circ\text{C}$.
- 4.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 5.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.And device mounted on a large heatsink
- 6.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics

