100V N-Channel Trench Power MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	80mΩ@10V	12A

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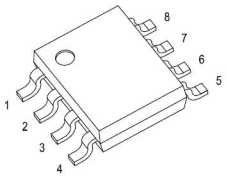
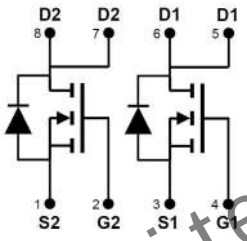


Schematic diagram



Features

- Very Low On-resistance $R_{DS(ON)}$
- LowCrss
- Fast switching
- Improved dv/dt capability

Applications

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

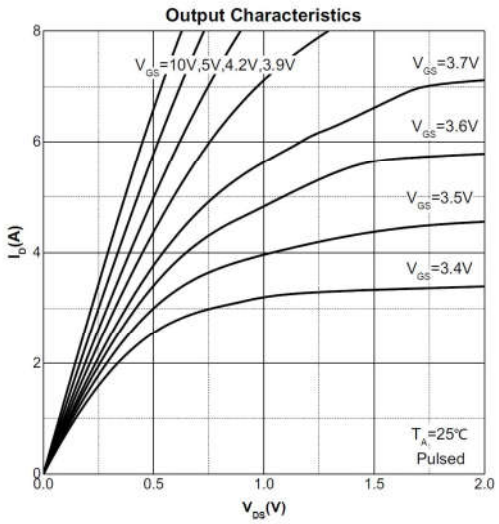
Absolute Maximum rating（T_A = 25℃ unless otherwise noted）

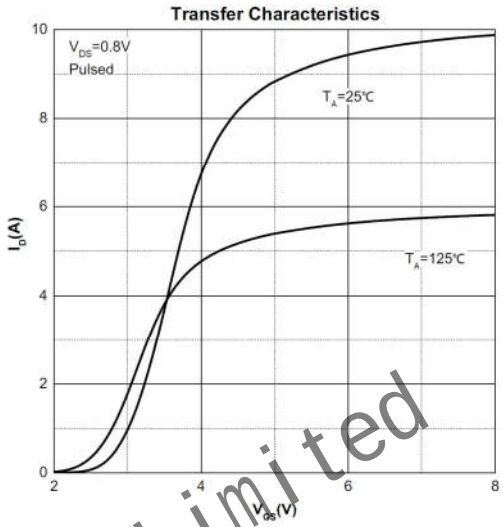
Parameter		Symbol	Value	Units
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Drain Current	T_A = 25℃	I_D	12	A
Drain Current - Pulsed		I_{DM}	35	A
Power Dissipation	T_A = 25℃	P_D	1.5	W
Thermal Resistance, Junction-to-Ambient		$R_{\theta JA}$	85	℃/W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	℃

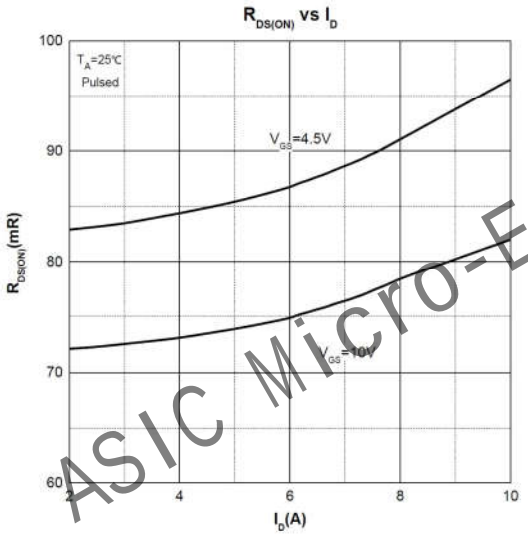
Electrical Characteristics（T_A = 25℃ unless otherwise noted）

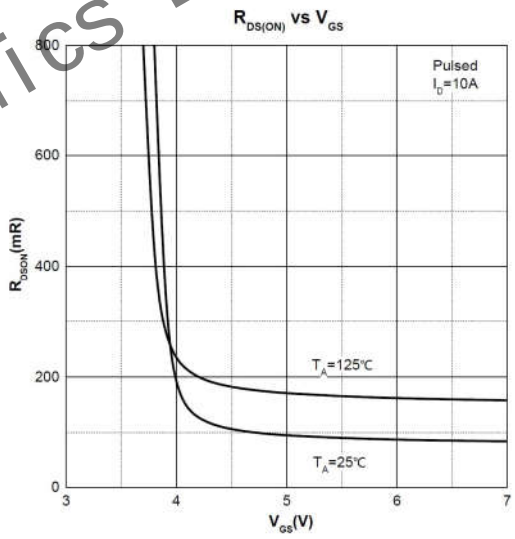
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}= 0V, I_D= 250μA	100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= 100V, V_{GS}= 0V			1	μA
Gate - Body Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}= 0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D= 250μA	1	2	3	V
Drain-source On-resistance	$R_{DS(on)}$	V_{GS}= 10V, I_D= 4A		80	100	mΩ
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}= 50V, V_{GS}= 0V, f= 1MHz		847		pF
Output Capacitance	C_{oss}			33		
Reverse Transfer Capacitance	C_{rss}			29		
Switching Characteristics						
Total Gate Charge	Q_g	V_{DS}= 50V, V_{GS}= 10V, I_D= 10A		20		nC
Gate-source Charge	Q_{gs}			1.8		
Gate-drain Charge	Q_{gd}			4		
Turn-on Delay Time	$t_{d(on)}$	V_{GS}= 10V, V_{DS}= 50V, R_L= 15Ω R_{GEN}= 2.5Ω		11		ns
Turn-on Rise Time	t_r			7		
Turn-off Delay Time	$t_{d(off)}$			34		
Turn-off Fall Time	t_f			9		
Source - Drain Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}= 0V, I_S= 10A			1.2	V

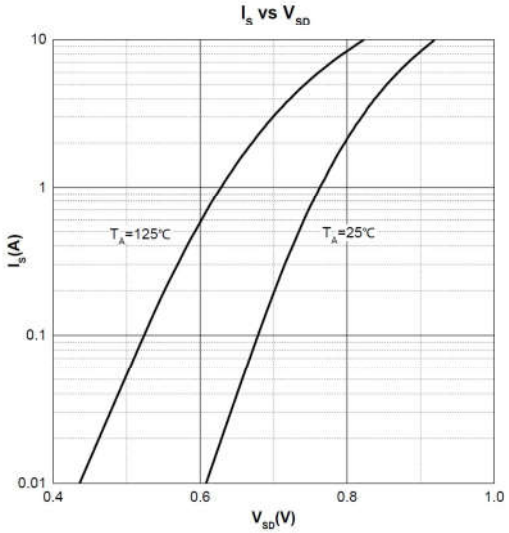
Typical Characteristic

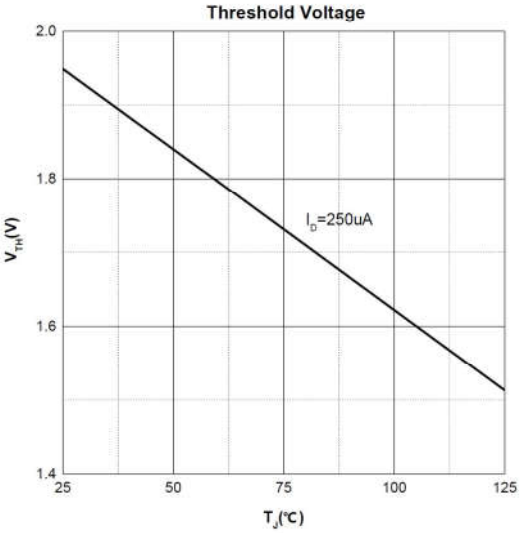












Dimension

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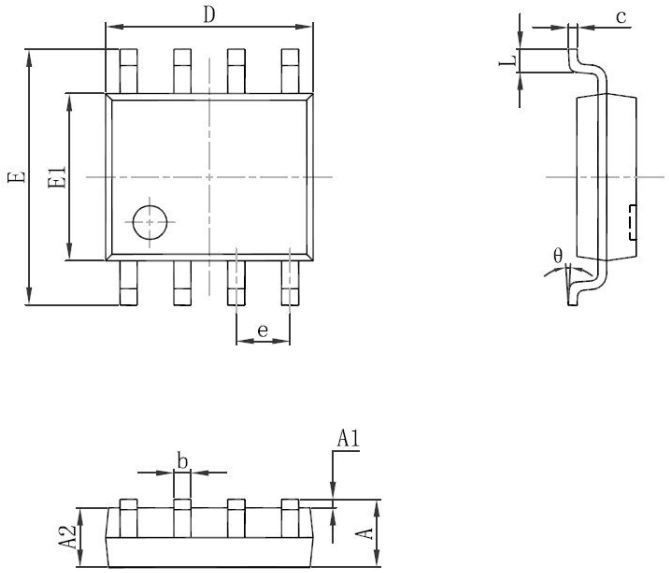

Symbol	Dimensions		Dimensions	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1. 270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	S'	0°	8°