

GENERAL DESCRIPTION

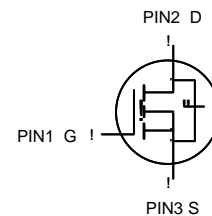
This advanced high voltage MOSFET is designed to stand high energy in the avalanche mode and switch efficiently. This new high energy device also offers a drain-to-source diode fast

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applications such as power supplies, converters, power motor controls and bridge circuits.

FEATURE

- z High Current Rating
- z Lower $R_{DS(on)}$
- z Lower Capacitance
- z Lower Total Gate Charge
- z Tighter V_{SD} Specifications
- z Avalanche Energy Specified



Maximum ratings ($T_a=25$ / unless other wise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	± 30	
Continuous Drain Current	I_D	7	A
Pulsed Drain Current	I_{DM}	30.8	
Single Pulsed Avalanche Energy (note1)	E_{AS}	580	mJ
Thermal Resistance from Junction to Ambient	R_{JA}	62.5	/ W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 ~+150	/
Maximum lead temperure for soldering purposes , Duration 5 seconds	T_L	260	

Electrical characteristics (T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	600			V
Drain-source diode forward voltage(note2)	V _{SD}	V _{GS} = 0V, I _S =7A			1.4	
Zero gate voltage drain current	I _{DSS}	V _{DS} =600V, V _{GS} =0V			1	μA
Gate-body leakage curren (note2)	I _{GSS}	V _{DS} =0V, V _{GS} =±30V			±100	nA
On characteristics (note2)						
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.0		4.0	V
Static drain-source on-resistance	R _{DS(on)}	V _{GS} =10V, I _D =3.5A			1.3	Ω
Forward transconductance	g _{FS}	V _{DS} =50V, I _D =3.9A	5			S
Dynamic characteristics (note 3)						
Input capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f =1MHz			1600	pF
Output capacitance	C _{oss}				190	
Reverse transfer capacitance	C _{rss}				25	
Switching characteristics (note 3)						
Turn-on delay time (note3)	t _{d(on)}	V _{DD} =300V, V _{GS} =10V, R _G =25Ω, I _D =7A			80	ns
Turn-on rise time (note3)	t _r				165	
Turn-off delay time (note3)	t _{d(off)}				160	
Turn-off fall time (note3)	t _f				120	

Notes :

1. L=19.5mH, I_L=7A, V_{DD}=50V, V_{GS}=10V, R_G=0Ω, Starting T_J=25°C.
2. Pulse Test : Pulse width≤300μs, duty cycle ≤2%.
3. These parameters have no way to verify.