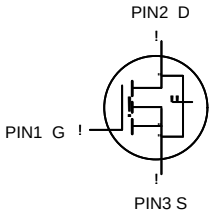
TO-220

FEATURES

. Dynamic dv/dt Rating
. Repetitive Avalanche Rated
. Fast Switching
. Ease of Paralleling
. Simple Drive Requirement



MAXIMUM RATINGS (T_a=25 / unless otherwise noted)

Symbol	Parameter	Value	Units
I_D @T_C=25 /	Continuous Drain Current, V_{GS} @ 10 V	4.5	A
I_D @T_C=100 /	Continuous Drain Current, V_{GS} @ 10 V	2.9	A
I_{DM}	Pulsed Drain Current (note 1)	18	A
P_D	Power Dissipation	2	W
R $_{JA}$	Thermal Resistance from Junction to Ambient	62.5	/ /W
V_{GS}	Gate-Souse Voltage	±20	V
E_{AS}	Single Pulse Avalanche Energy (note2)	280	mJ
I_{AR}	Avalanche Current (note 1)	4.5	A
E_{AR}	Repetitive Avalanche Energy (note 1)	7.4	mJ
dv/dt	Peak Diode Recovery dv/dt (note 3)	3.5	V/ns
T_J	Junction Temperature	150	/
T_{stg}	Storage Temperature	-55~+150	/

ELECTRICAL CHARACTERISTICS (T a=25 **/** unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-**s**ource **b**reakdown **v**oltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250μA	500			V
Gate-**t**hreshold **v**oltage	$V_{(GS)th}$	V_{DS}=V_{GS}, I_D=250μA	2		4	
Gate-body **l**eakage	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Zero **g**ate **v**oltage **d**rain **c**urrent	I_{DSS}	V_{DS}=500V, V_{GS}=0V			25	μA
Drain-**s**ource **o**n-**r**esistance (note 4)	$R_{DS(on)}$	V_{GS}=10V, I_D=2.7A (note 4)			1.5	
Forward **t**ran**s**conductance (note 4)	g_{fs}	V_{DS}=50V, I_D=2.7A (note 4)	2.5			S
Diode **f**orward **v**oltage	V_{SD}	I_S=4.5A, V_{GS}=0V			1.6	V
Total **g**ate **c**harge	Q_g	V_{DS}=400V, V_{GS}=10V,I_D=3.1A			38	nC
Gate-**s**ource **c**harge	Q_{gs}				5.0	
Gate-**d**rain **c**harge	Q_{gd}				22	
Input **c**apacitance (note 5)	C_{iss}	V_{DS}=25V, V_{GS}=0V,f=1MHz		610		pF
Output **c**apacitance (note 5)	C_{oss}			160		
Reverse **t**ransfer **c**apacitance (note 5)	C_{rss}			68		nS
Turn-on delay time (note 4,5)	$t_{d(on)}$	V_{DD}=250V,R_D=79 , I_D=3.1A,R_G=12		8.2		nS
Rise time (note 4,5)	t_r			16		nS
Turn-off delay time (note 4,5)	$t_{d(off)}$			42		nS
Fall time (note 4,5)	t_r			16		

Notes:

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. L = 24mH, I_{AS} = 4.5A, V_{DD} = 50V, R_G = 25 , Starting T_J = 25°C.
3. I_{SD} = 4.5A, di/dt = 300A/μs, V_{DD} = $V_{(BR)DSS}$, Starting T_J = 25°C.
4. Pulse Test : Pulse width ” 300μs, Duty cycle ‘2%.
5. These parameters have no way to verify.