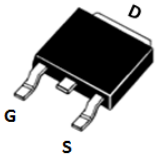
30V N-Channel Power MOSFET

DESCRIPTION：

- Excellent $R_{DS(ON)}$ and Low Gate Charge
- Advanced Trench Technology
- 100% UIS Tested
- 100% ΔVds Tested
- RoHS compliant

V_{DS}	30V
I_D	100A
$R_{DS(ON)\_MAX}$ @V_{GS}=10V	3.8mΩ



TO-252

TYPICAL APPLICATIONS：

- Load Switch
- PWM
- Power Management

MAXIMUM RATINGS (at T_J = 25 °C, unless otherwise specified)

Characteristic	Condition	Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25℃ T_C=100℃	I_D	100 63	A
Pulsed Drain Current (1)		I_{DM}	400	A
Single Pulsed Avalanche Energy (2)		E_{AS}	196	mJ
Power dissipation	T_C=25℃	P_D	78	W
Junction temperature		T_J	150	℃
Storage temperature Range		T_{STG}	-55~+150	℃

Notes： 1. Pulse width limited by maximum allowable junction temperature
2. EAS Condition Starting Tj=25℃, V_{DD}=30V, V_G=10V, R_G=25ohm, L=0.5Mh, I_{AS}=28A

THERMAL CHARACTERISTICS

Characteristic	Condition	Symbol	Value	Unit
Thermal resistance,	Junction to Case	$R_{\theta JC}$	1.6	℃/W

ELECTRICAL CHARATERISTICS (at T_J = 25 °C, unless otherwise specified)

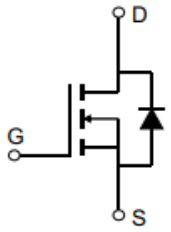
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage VGS = 0V, ID = 250uA	$V_{(BR)DSS}$	30			V
Zero Gate Voltage Drain Current VDS = 30 V, VGS = 0 V	I_{DSS}			1.0	uA
Gate-Source Leakage Current VGS = ±20V, VDS = 0V	I_{GSS}			±100	nA
Gate-Source threshold voltage VDS = VGS, ID = 250uA	$V_{GS(th)}$	1.0	1.6	2.2	V
Drain-Source On-State Resistance VGS = 10V, ID = 30A VGS = 4.5V, ID = 20A	$R_{DS(on)}$		2.8 4.0	3.8 5.2	mΩ
Input capacitance f=1MHz, VDS= 15V, VGS=0 V	C_{iss}		2902		pF
Output capacitance f=1MHz, VDS= 15V, VGS=0 V	C_{oss}		372		pF
Reverse transfer capacitance f=1MHz, VDS= 15V, VGS=0 V	C_{rss}		312		pF
Total Gate Charge VDS= 15V, ID= 30A,VGS= 0 to 10V	Q_G		58		nC
Gate to Source Charge VDS= 15V, ID= 30A,VGS= 0 to 10V	Q_{GS}		12		nC
Gate to Drain Charge VDS= 15V, ID= 30A,VGS= 0 to 10V	Q_{GD}		13		nC
Turn-on delay time VDD= 15V, VGS= 10V, ID= 30A, R_{GEN}=3Ω	td $_{(ON)}$		11		ns
Turn-on Rise time VDD= 15V, VGS= 10V, ID= 30A, R_{GEN}=3Ω	tr		29		ns
Turn-off delay time VDD= 15V, VGS= 10V, ID= 30A, R_{GEN}=3Ω	td $_{(OFF)}$		47		ns
Turn-off Fall time VDD= 15V, VGS= 10V, ID= 30A, R_{GEN}=3Ω	tf		18		ns

Body Diode

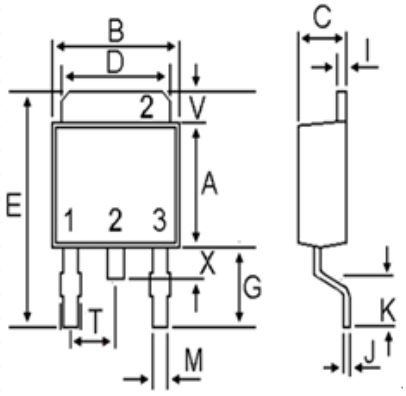
Continuous Drain to Source Diode Forward Current	I_S			100	A
Pulsed Drain to Source Diode Forward Current	I_{SM}			400	A
Drain to Source Diode Forward Voltage VGS = 0V, I_{SD} = 30A	V_{SD}			1.2	V

Body Diode Reverse Recovery Time IF = 30A, di/dt = 100A/us	T_{RR}		16		ns
Body Diode Reverse Recovery Charge IF = 30A, di/dt = 100A/us	Q_{RR}		7		nC

- Circuit diagram



- TO-252 Package outlines : Dimensions in mm



DIM	MILLIMETERS	
	MIN	MAX
A	5.97	6.22
B	6.30	6.75
C	2.18	2.40
D	4.95	5.50
E	9.40	10.41
G	2.75	3.20
I	0.46	0.89
J	0.46	0.61
K	1.40	1.78
M	0.64	0.89
T	2.18	2.38
V	0.89	1.27
X	---	1.05

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