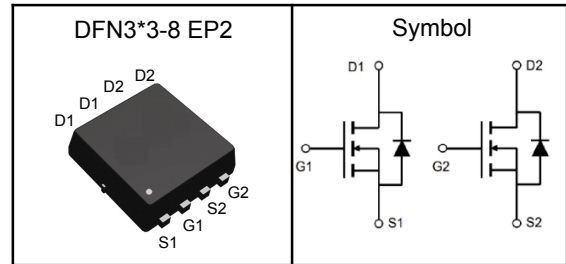


Dual N-Channel Enhancement Mode MOSFET
Features

- Fast switching speed
- Reliable and Rugged
- ROHS Compliant
- 100% Avalanche Tested

Applications

- Power Management in Desktop Computer
- DC/DC Converters

Pin Description


V_{DSS}	40	V
$R_{DS(ON)-Typ}$	14	m Ω
I_D	7.8	A

Absolute Maximum Ratings ($T_C=25^\circ\text{C}$, Unless Otherwise Noted)

Symbol	Parameter	N-Channel	Unit
V_{DSS}	Drain-Source Voltage	40	V
V_{GSS}	Gate-Source Voltage	± 20	V
T_J	Maximum Junction Temperature	-55 to 150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
$I_{DM}^{①}$	Pulse Drain Current Tested	$T_A=25^\circ\text{C}$	A
I_D	Continuous Drain Current	7.8	A
P_D	Maximum Power Dissipation	$T_A=25^\circ\text{C}$	W
E_{AS}	Avalanche Energy, Single pulse	$L=0.1\text{mH}$	mJ

Thermal Characteristics

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	96	$^\circ\text{C}/\text{W}$

Note ① : Max. current is limited by bonding wire.

Note ② : UIS tested and pulse width are limited by maximum junction temperature 150°C .

Note ③ : Surface Mounted on 1in^2 FR-4 board with 1oz.



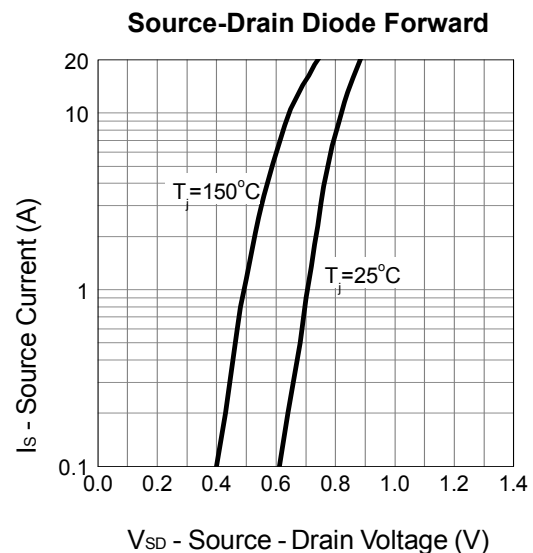
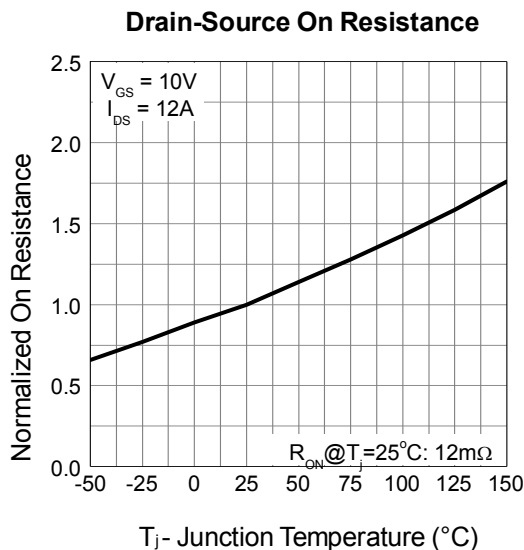
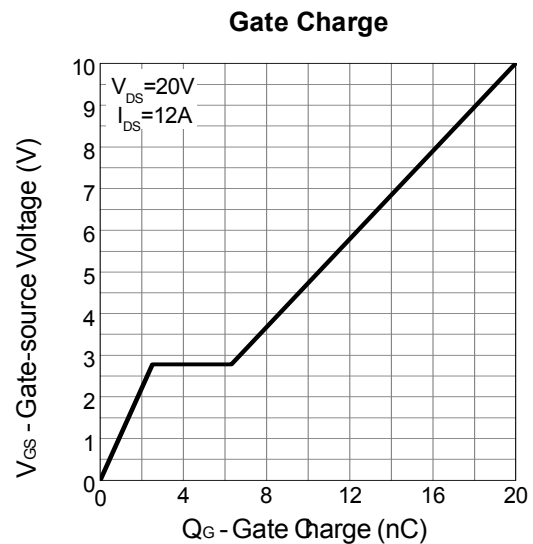
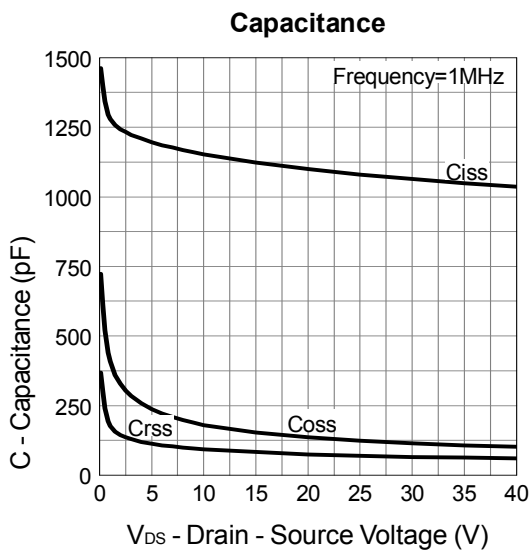
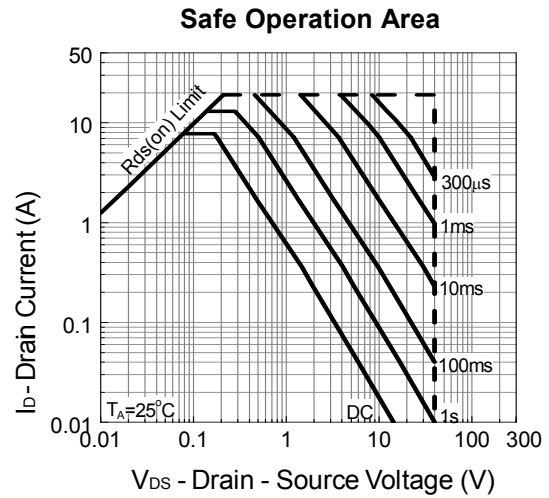
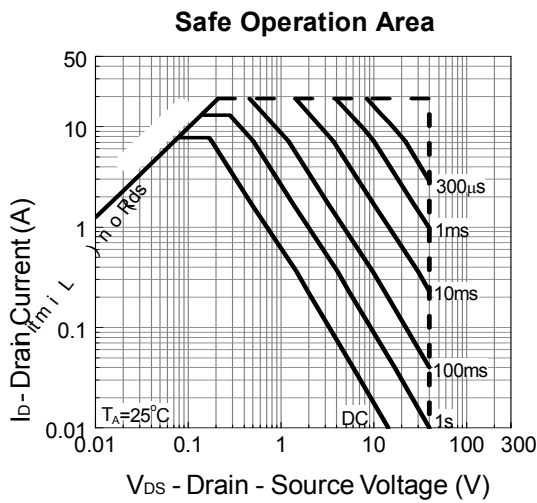
Dual N-Channel Enhancement Mode MOSFET

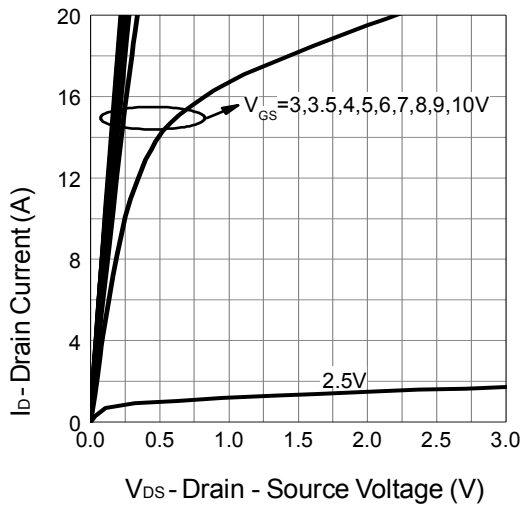
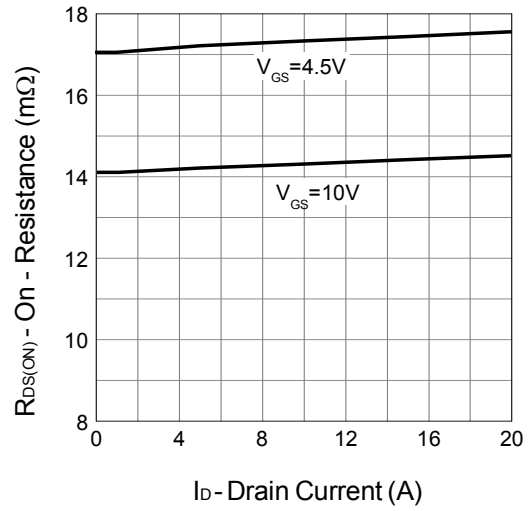
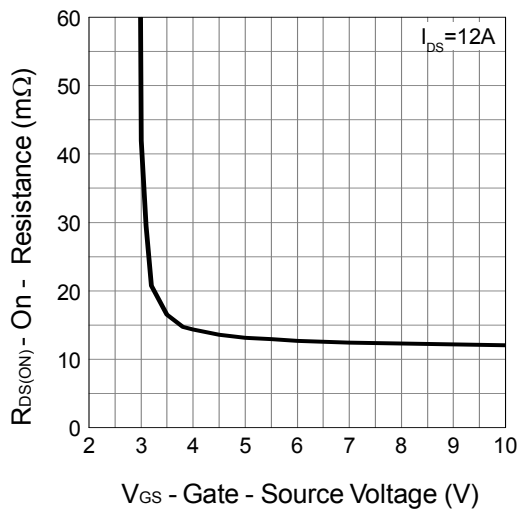
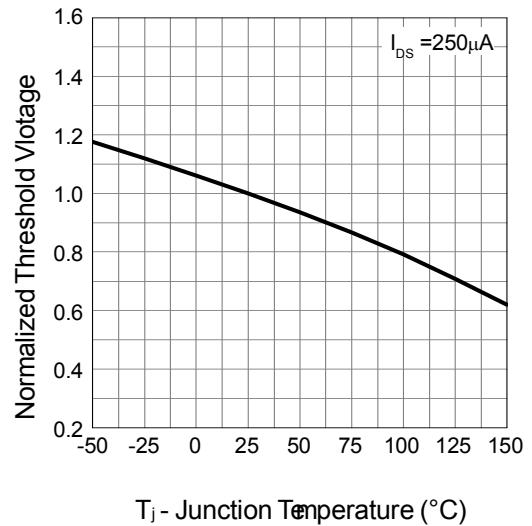
Electrical Characteristics ($T_J=25^{\circ}\text{C}$, Unless Otherwise Noted)

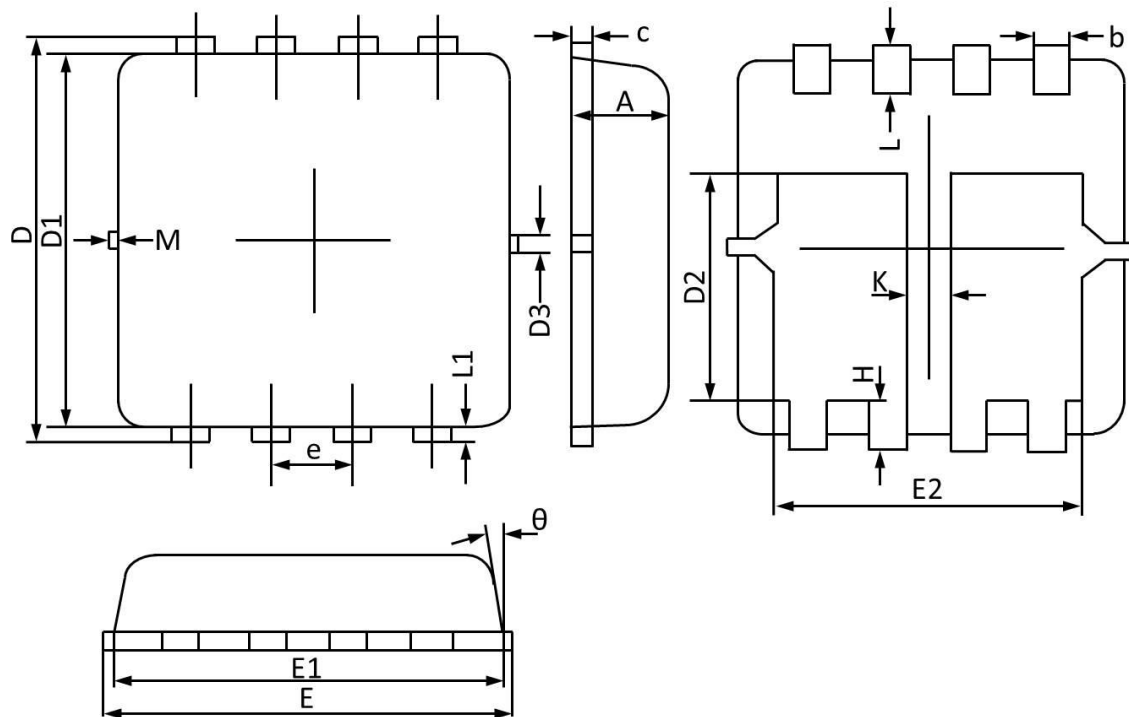
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Static Electrical Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	40	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=32V, V_{GS}=0V$	---	---	1	μA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.5	---	2.5	V
I_{GSS}	Gate Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
$R_{DS(ON)}$	Drain-Source On-state Resistance	$V_{GS}=10V, I_D=12A$	---	14	17	$m\Omega$
		$V_{GS}=4.5V, I_D=10A$	---	17	20	$m\Omega$
Dynamic Characteristics ^⑤						
C_{iss}	Input Capacitance	$V_{GS}=0V, V_{DS}=20V, \text{Freq.}=1\text{MHz}$	---	1095	---	pF
C_{oss}	Output Capacitance		---	135	---	
C_{rss}	Reverse Transfer Capacitance		---	74	---	
$T_{d(on)}$	Turn-on Delay Time	$V_{DD}=30V, R_L=30\Omega, I_{DS}=1A, V_{GEN}=10V, R_G=6\Omega$	---	8.2	---	nS
T_r	Turn-on Rise Time		---	6.8	---	
$T_{d(off)}$	Turn-off Delay Time		---	25.2	---	
T_f	Turn-off Fall Time		---	6.4	---	
Q_g	Total Gate Charge	$V_{DS}=20V, V_{GS}=4.5V, I_D=12A$	---	9.6	---	nC
Q_{gs}	Gate-Source Charge		---	2.5	---	
Q_{gd}	Gate-Drain Charge		---	3.8	---	
Source-Drain Characteristics						
V_{SD}	Diode Forward Voltage	$I_S=10A, V_{GS}=0V$	---	0.88	1.1	V
t_{rr}	Reverse Recovery Time	$I_F=12A, di/dt=100A/\mu s, T_J=25^{\circ}\text{C}, V_{DS}=20V$	---	17	---	nS
Q_{rr}	Reverse Recovery Charge		---	12	---	nC

Note ④: Pulse test (pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$).

Note ⑤: Guaranteed by design, not subject to production testing.

Dual N-Channel Enhancement Mode MOSFET
Typical Characteristics


Dual N-Channel Enhancement Mode MOSFET
Output Characteristics

Drain-Source On Resistance

Gate-Source On Resistance

Gate Threshold Voltage


Dual N-Channel Enhancement Mode MOSFET
DFN3*3-8 EP2 Package Outline Data


Symbol	Dimensions (unit:mm)			Symbol	Dimensions (unit:mm)		
	Min	Typ	Max		Min	Typ	Max
A	0.70	0.75	0.85	E2	2.35	2.50	2.60
b	0.25	0.30	0.35	e	0.65 BSC		
c	0.10	0.17	0.25	H	0.30	0.40	0.50
D	3.10	3.30	3.45	L	0.30	0.40	0.50
D1	2.90	3.05	3.20	L1	0.13 REF		
D2	1.45	1.70	1.95	K	0.30 REF		
D3	0.13 REF			theta	0°		12°
E	3.05	3.25	3.40	M	0.15 REF		
E1	2.90	3.10	3.25				