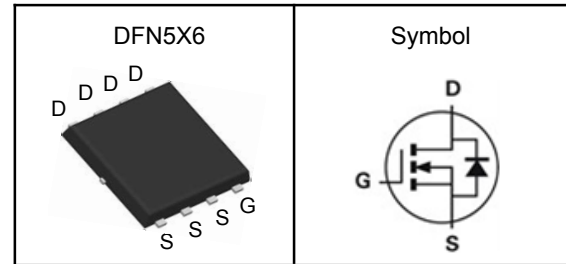


N-Channel Enhancement Mode MOSFET
Features

- Low Rdson for low conduction loss
- Reliable and Rugged
- ROHS Compliant & Halogen-Free

Pin Description

Applications

- Power Management in Desktop Computer
- DC/DC Converters

V _{DSS}	30	V
R _{DS(ON)-Typ}	1.1	mΩ
I _D	160	A

Absolute Maximum Ratings(T_C=25°C, Unless Otherwise Noted)

Symbol	Parameter	N-Channel	Unit
V _{DSS}	Drain-Source Voltage	30	V
V _{GSS}	Gate-Source Voltage	±20	V
T _J	Maximum Junction Temperature	-55 to 150	°C
T _{STG}	Storage Temperature Range	-55 to 150	°C
I _{DM} ^①	Pulse Drain Current Tested	400	A
I _D	Continuous Drain Current	T _C =25°C	160
		T _C =100°C	100
P _D	Maximum Power Dissipation	T _C =25°C	86.8
		T _C =100°C	34.7
E _{AS} ^②	Avalanche Energy, Single pulse	231	mJ

Thermal Characteristics

Symbol	Parameter	Rating	Unit
R _{θJA} ^③	Thermal Resistance-Junction to Ambient	65	°C/W
R _{θJC}	Thermal Resistance-Junction to Case	1.4	°C/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.

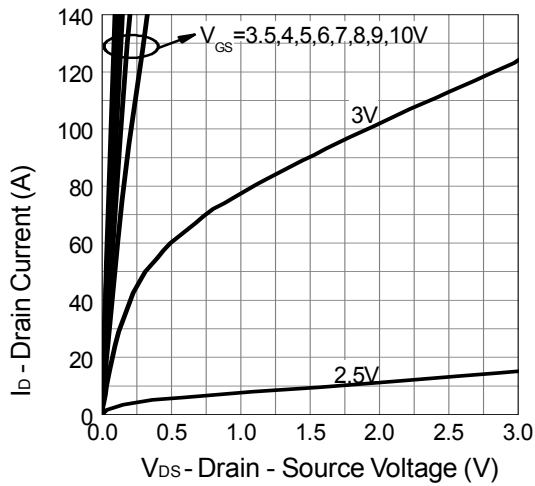
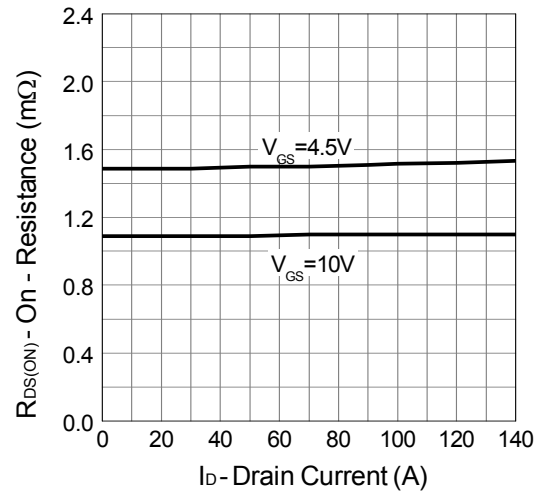
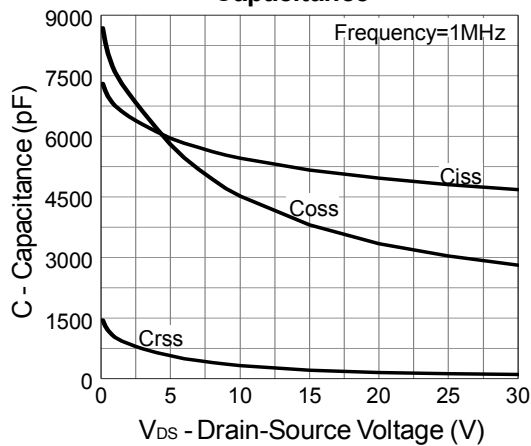
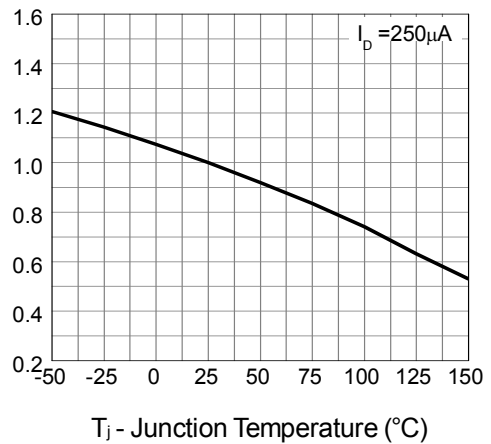
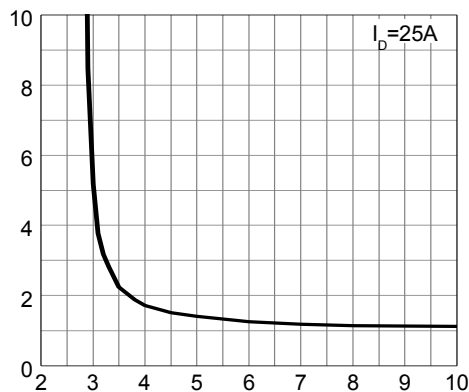
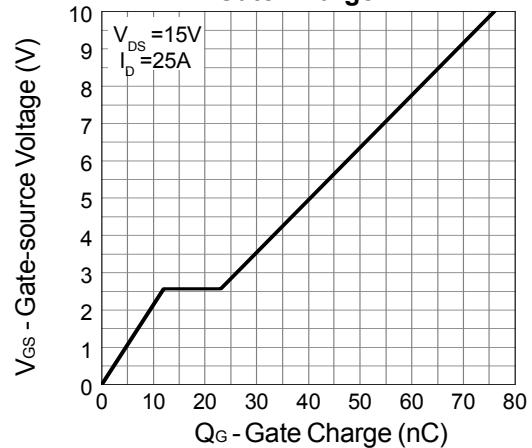
Note ③ : Surface Mounted on 1in² FR-4 board with 1oz.

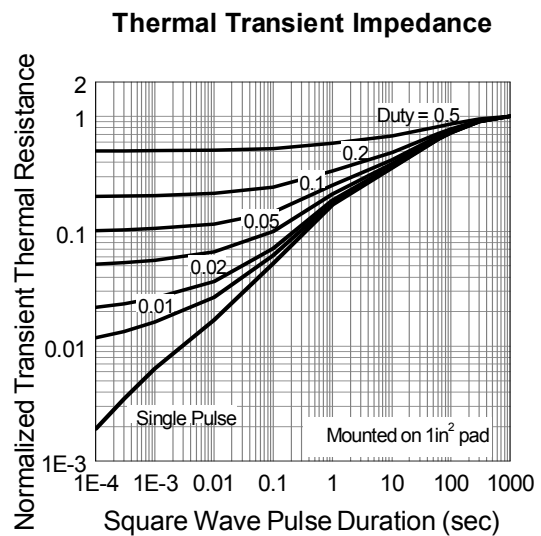
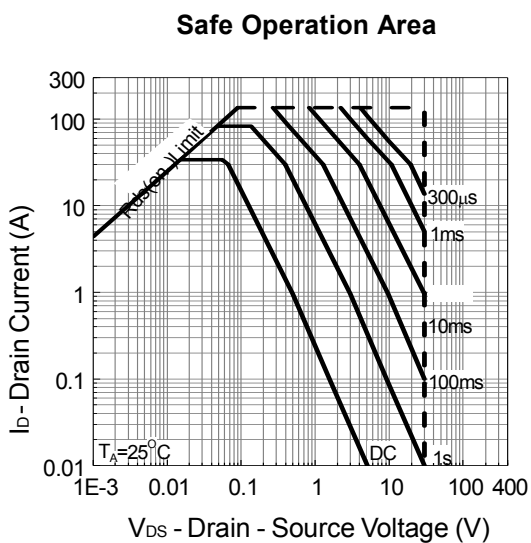
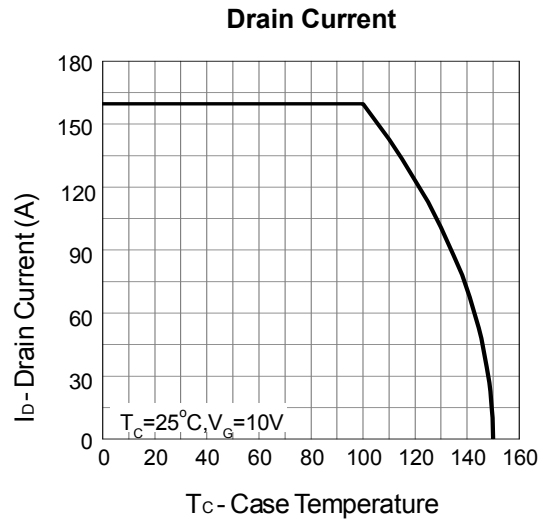
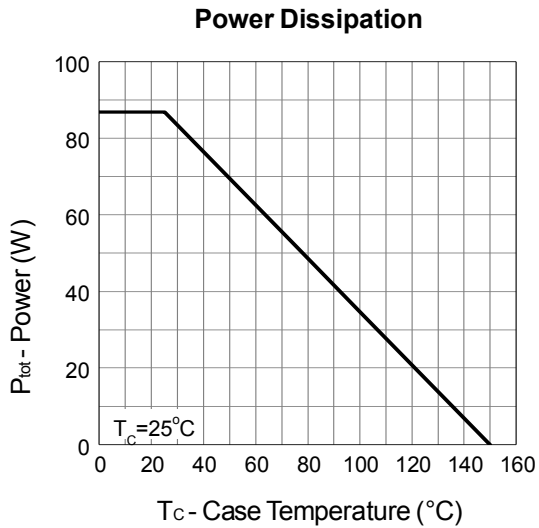
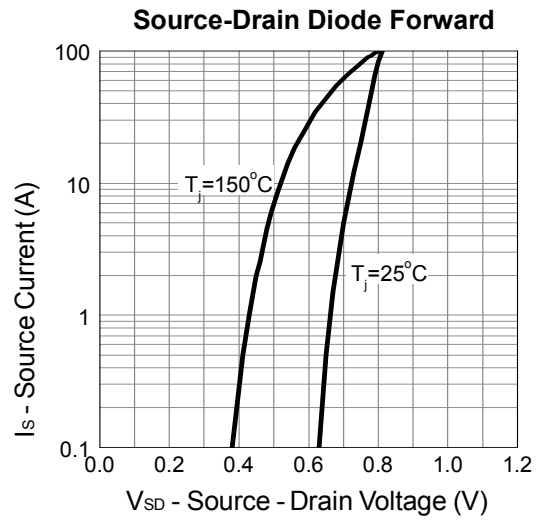
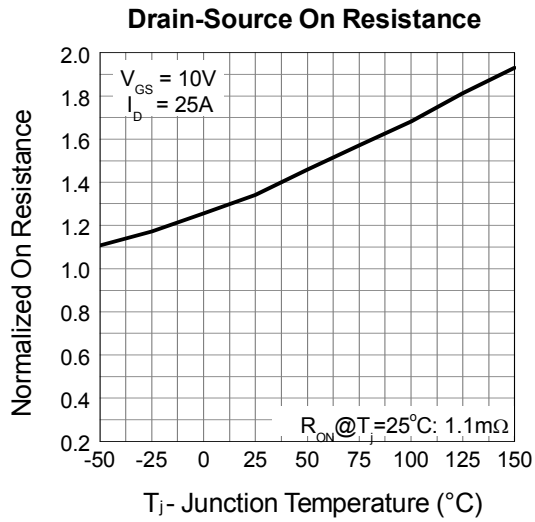
**N-Channel Enhancement Mode MOSFET****Electrical Characteristics** ($T_J=25^\circ\text{C}$, Unless Otherwise Noted)

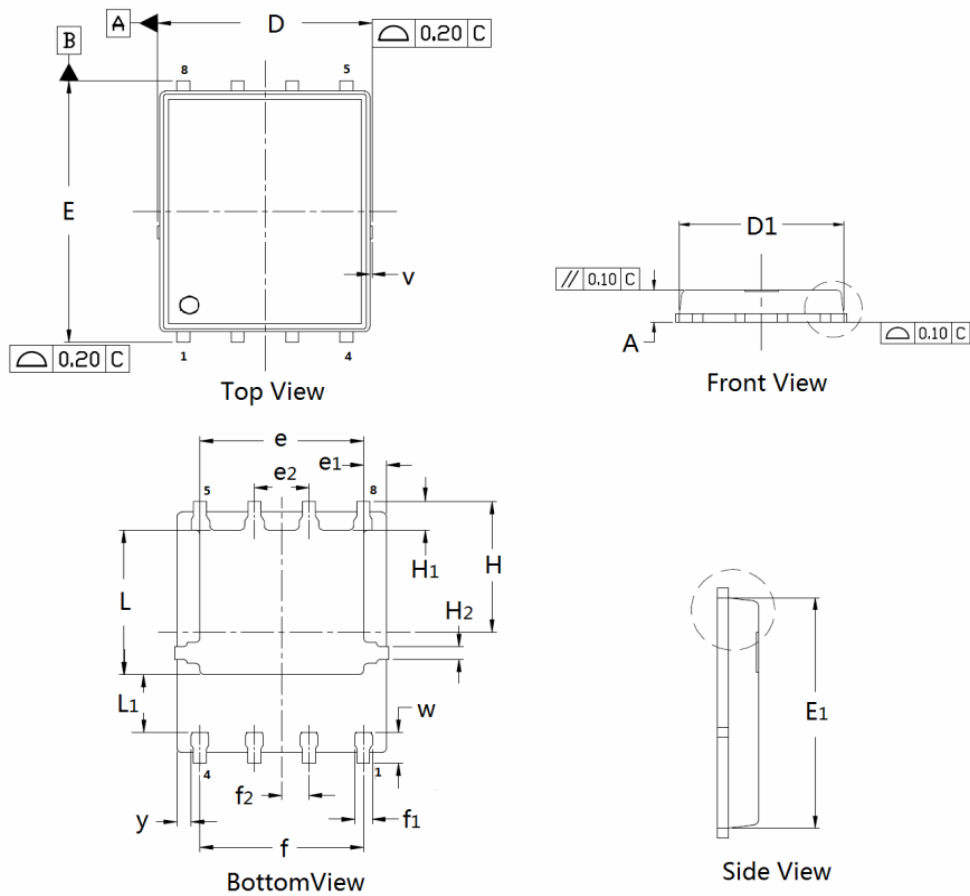
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Static Electrical Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	30	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=24V, V_{GS}=0V$	---	---	1	μA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.2	---	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	$V_{GS}=10V, I_D=25A$	---	1.1	1.3	m Ω
		$V_{GS}=4.5V, I_D=15A$	---	1.5	1.9	
gfs	Forward Transconductance	$V_{DS}=5V, I_D=20A$	---	35	---	S
Dynamic Characteristics^⑤						
C_{iss}	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=15V,$ Freq.=1MHz	---	5160	---	pF
C_{oss}	Output Capacitance		---	3816	---	
C_{riss}	Reverse Transfer Capacitance		---	260	---	
$T_{d(on)}$	Turn-on Delay Time	$V_{DD}=15V, V_{GS}=10V$, $R_G=1\Omega, I_D=1A$	---	20.5	---	nS
T_r	Turn-on Rise Time		---	11	---	
$T_{d(off)}$	Turn-off Delay Time		---	53	---	
T_f	Turn-off Fall Time		---	80	---	
Q_g	Total Gate Charge	$V_{DS}=15V, V_{GS}=10V$, $I_D=25A$	---	76	---	nC
Q_{gs}	Gate-Source Charge		---	12	---	
Q_{gd}	Gate-Drain Charge		---	11	---	
Source-Drain Characteristics						
$V_{SD}^{④}$	Diode Forward Voltage	$V_{GS}=0V, I_S=1A, T_J=25^\circ\text{C}$	---	---	1.2	V

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

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

N-Channel Enhancement Mode MOSFET
Typical Characteristics
Output Characteristics

Drain-Source On Resistance

Capacitance

Gate Charge


N-Channel Enhancement Mode MOSFET


N-Channel Enhancement Mode MOSFET
DFN5×6 Package Outline Data

DIMENSIONS (unit : mm)

Symbol	Min	Typ	Max	Symbol	Min	Typ	Max
A	0.90	1.02	1.10	D	4.90	4.98	5.10
D ₁	4.80	4.89	5.10	E	5.90	6.11	6.25
E ₁	5.65	5.74	5.95	e	3.72	3.80	3.92
e ₁	--	0.5	--	e ₂	--	1.	--
f	--	3.8	--	f ₁	0.31	0.37	0.51
f ₂	--	0.6	--	H	--	3.	--
H ₁	0.59	0.63	0.79	H ₂	0.26	0.28	0.32
L	3.35	3.45	3.65	L ₁	--	1.	--
v	--	0.1	--	w	0.64	0.68	0.84
y	--	0.3	--		--		--