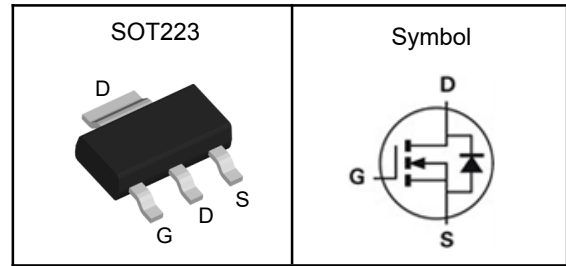


N-Channel Enhancement Mode MOSFET
Features

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

Applications

- Power Management in Desktop Computer
- DC/DC Converters

Pin Description


V_{DSS}	150	V
$R_{DS(ON)-Typ}$	130	m Ω
I_D	4	A

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

Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-Source Voltage	150	V
V_{GSS}	Gate-Source Voltage	± 20	V
T_J	Maximum Junction Temperature	-55 to 150	$^{\circ}C$
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}C$
$I_{DM}^{①}$	Pulse Drain Current Tested	16	A
I_D	Continuous Drain Current	4	A
P_D	Maximum Power Dissipation	4	W

Thermal Characteristics

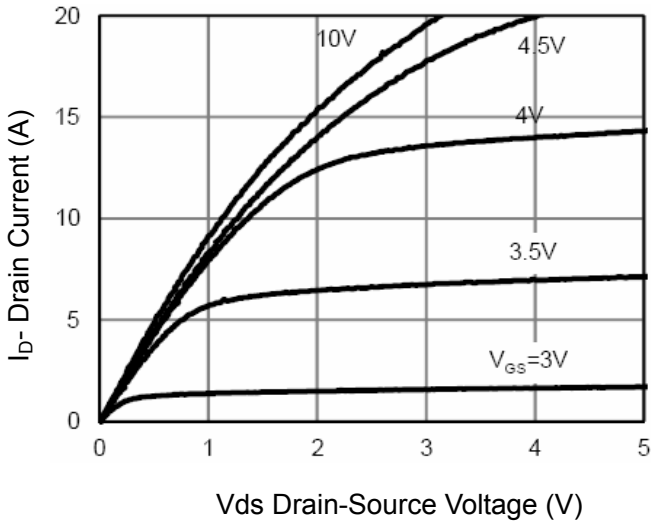
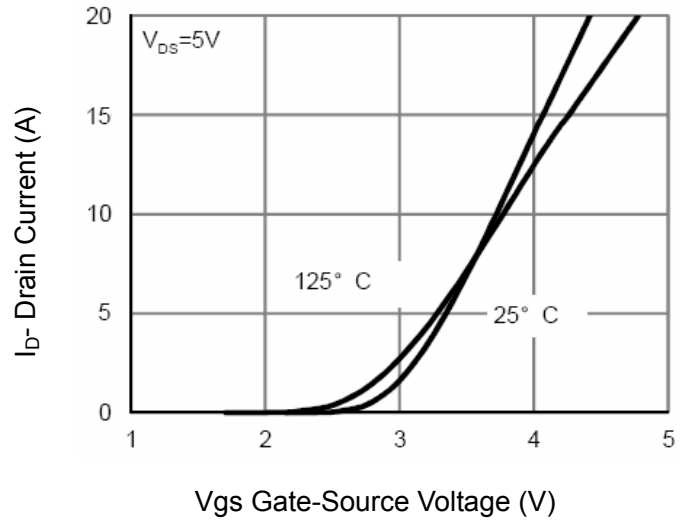
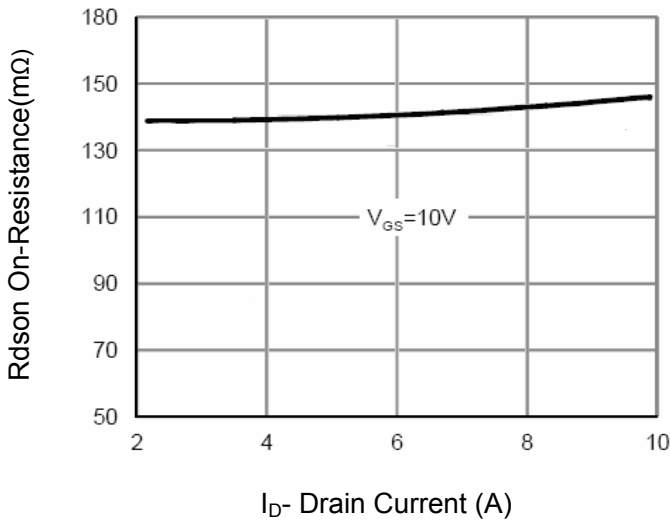
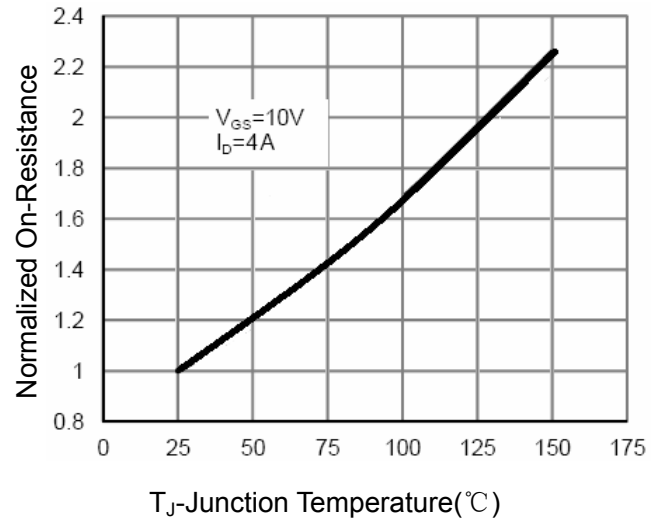
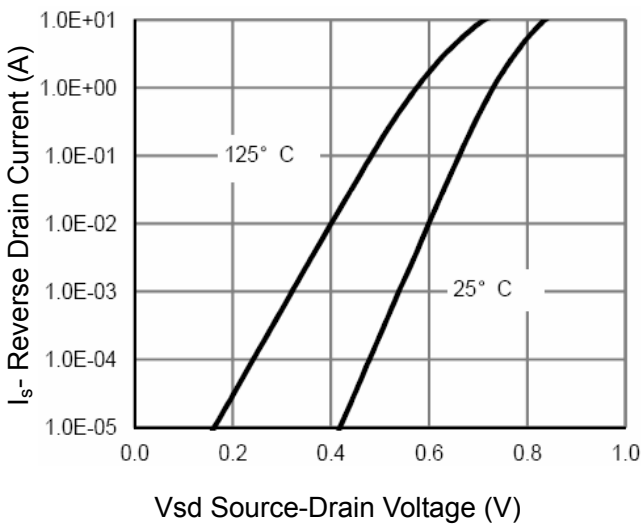
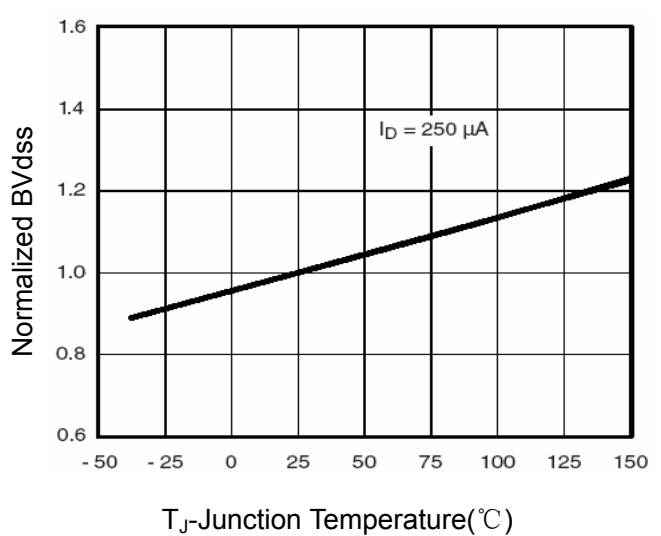
Symbol	Parameter	Rating	Unit
$R_{\theta JA}^{②}$	Thermal Resistance-Junction to Ambient	31	$^{\circ}C/W$

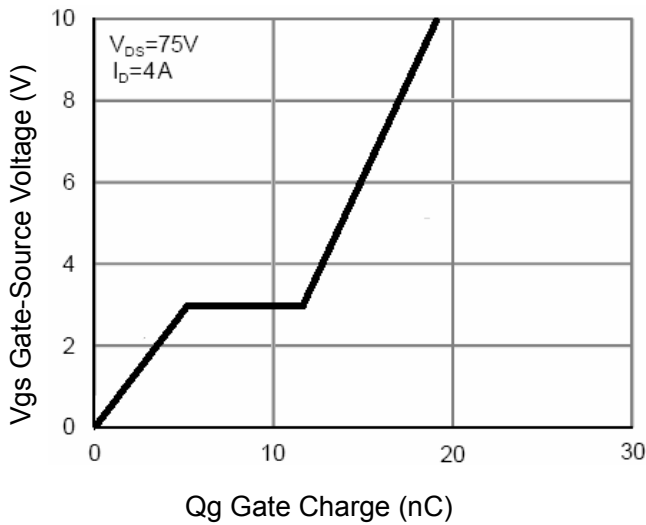
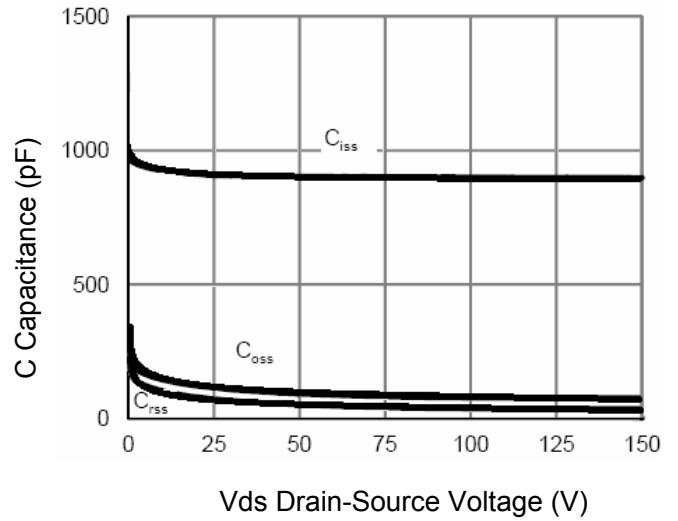
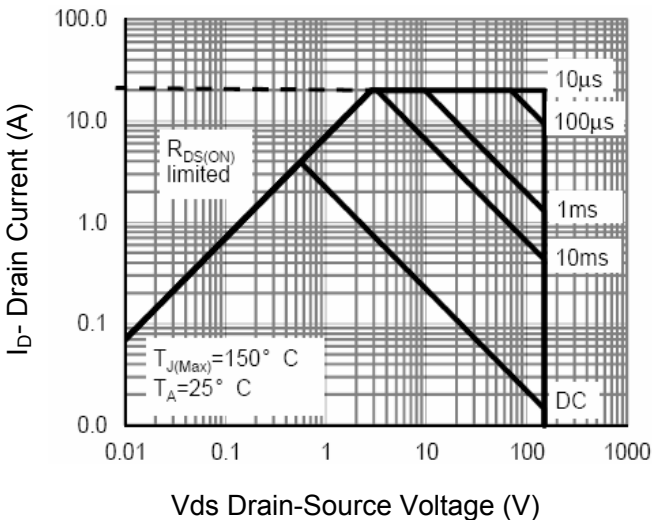
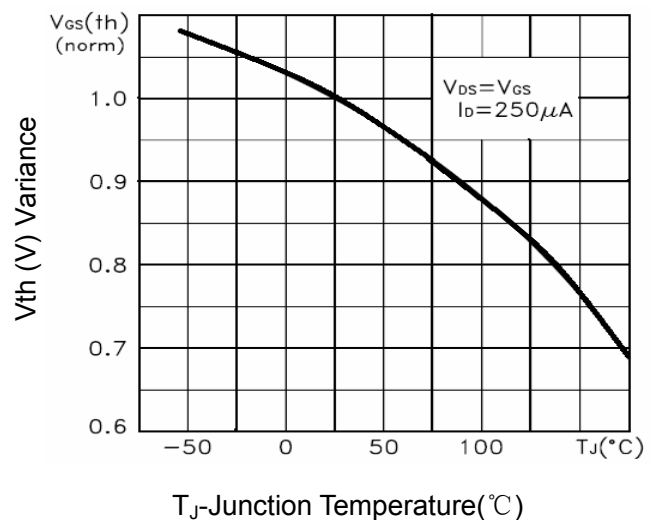
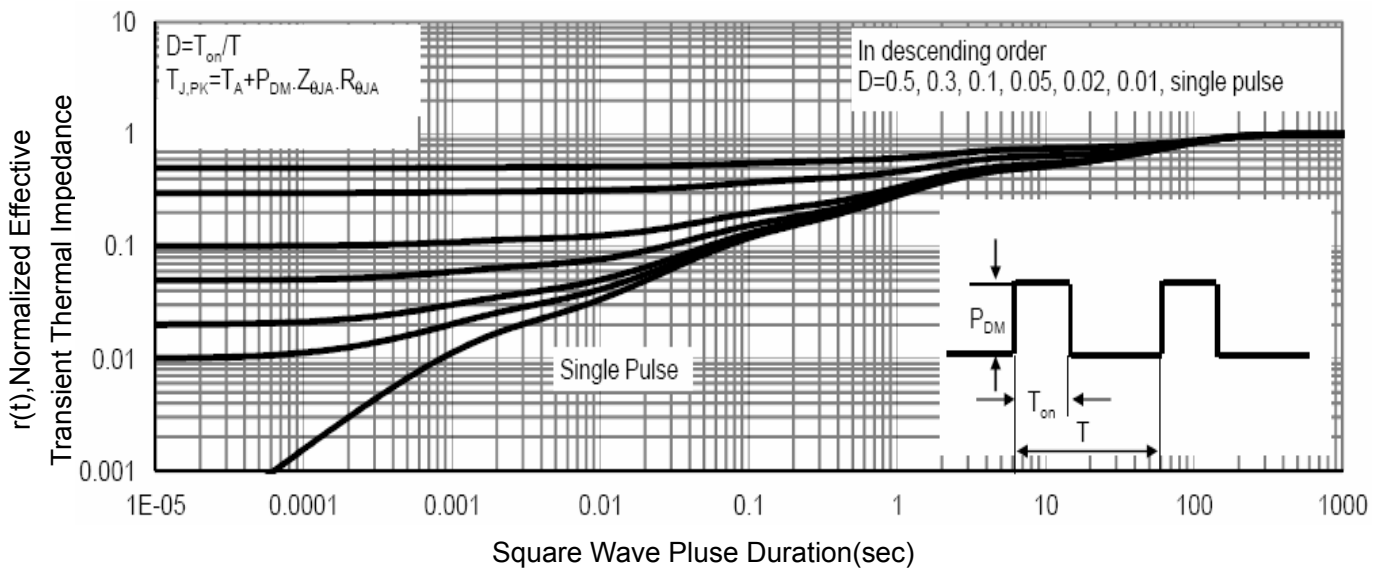
Note ① : Max. current is limited by bonding wire.

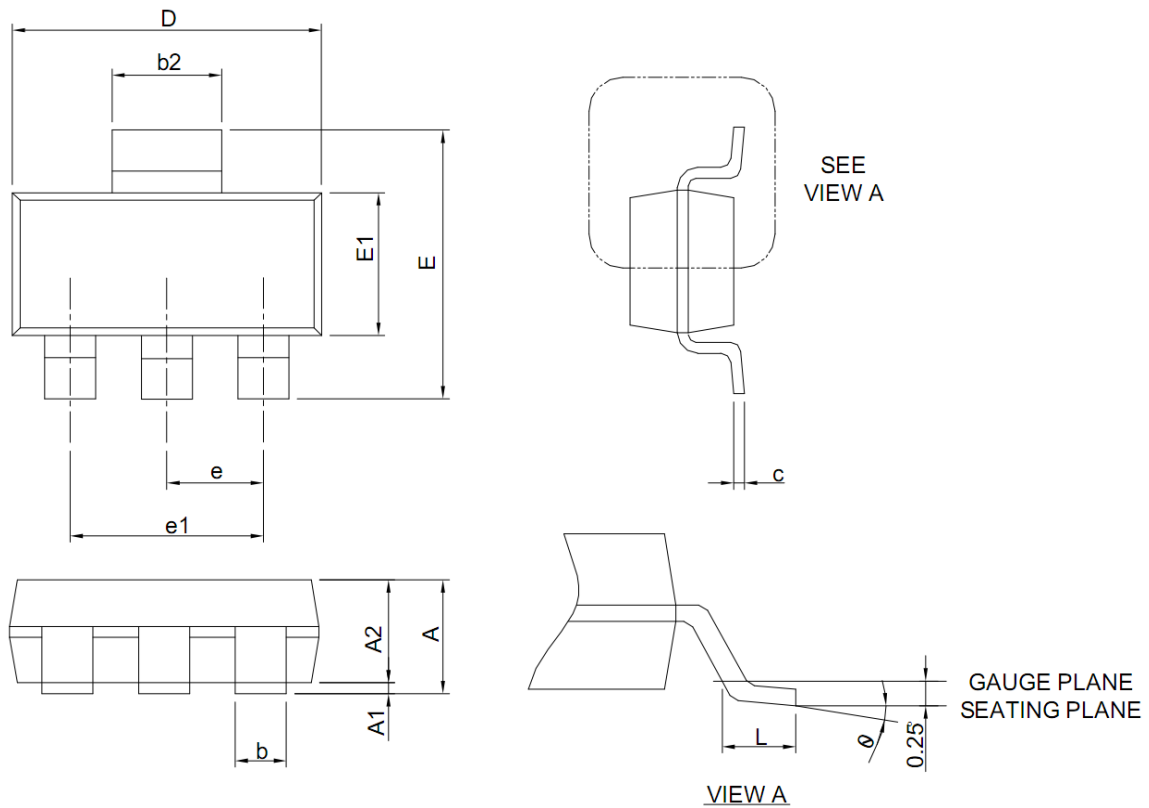
Note ② : Surface Mounted on 1in² FR-4 board with 1oz.

**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	$V_{GS}=0V, I_D=250\mu A$	150	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=150V, V_{GS}=0V$	---	---	1	μA
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.5	2.0	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	$V_{GS}=10V, I_D=4A$	---	130	175	m Ω
Dynamic Characteristics ^⑤						
C_{iss}	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=25V,$ Freq.=1MHz	---	900	---	pF
C_{oss}	Output Capacitance		---	115	---	
C_{rss}	Reverse Transfer Capacitance		---	70	---	
$T_{d(on)}$	Turn-on Delay Time	$V_{GS}=10V, V_{DD}=75V,$ $R_G=6\Omega$	---	8	---	nS
T_r	Turn-on Rise Time		---	10	---	
$T_{d(off)}$	Turn-off Delay Time		---	20	---	
T_f	Turn-off Fall Time		---	15	---	
Q_g	Total Gate Charge	$V_{GS}=10V, V_{DD}=75V,$ $I_D=4A$	---	19	---	nC
Q_{gs}	Gate-Source Charge		---	5.5	---	
Q_{gd}	Gate-Drain Charge		---	7	---	
Source-Drain Characteristics						
V_{SD}	Diode Forward Voltage	$I_S=4A, V_{GS}=0V$	---	---	1.2	V

N-Channel Enhancement Mode MOSFET
Typical Characteristics

Figure 1 Output Characteristics

Figure 2 Transfer Characteristics

Figure 3 Rdson- Drain Current

Figure 4 Rdson- Junction Temperature

Figure 5 Source- Drain Diode Forward

Figure 6 BV_{DSS} vs Junction Temperature

N-Channel Enhancement Mode MOSFET

Figure 7 Gate Charge

Figure 8 Capacitance vs Vds

Figure 9 Safe Operation Area

Figure 10 $V_{GS(th)}$ vs Junction Temperature

Figure 11 Normalized Maximum Transient Thermal Impedance

N-Channel Enhancement Mode MOSFET
SOT223 Package Outline Data


Symbol	Dimensions (unit:mm)			Symbol	Dimensions (unit:mm)		
	Min	Typ	Max		Min	Typ	Max
A	1.50	1.65	1.80	A1	0.02	0.06	0.10
A2	1.50	1.60	1.70	b	0.66	0.72	0.80
b2	2.90	3.00	3.10	c	0.23	0.30	0.35
D	6.30	6.50	6.70	E	6.70	7.00	7.30
E1	3.30	3.50	3.70	e	2.30 REF		
e1	4.60 REF			L	0.75	--	1.15
θ	0°	--	10°				