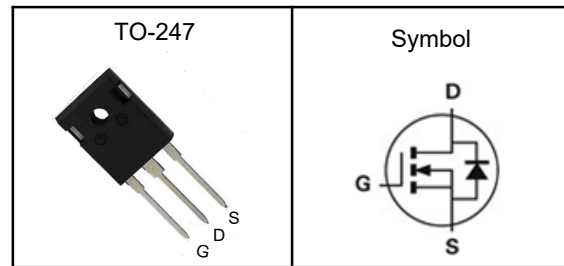


**N-Channel Enhancement Mode MOSFET**
**Features**

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

**Applications**

- Power Management in Desktop Computer
- DC/DC Converters

**Pin Description**


$V_{DSS}$	200	V
$R_{DS(ON)-Typ}$	11	m $\Omega$
$I_D$	136	A

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

Symbol	Parameter	N-Channel	Unit
$V_{DSS}$	Drain-Source Voltage	200	V
$V_{GSS}$	Gate-Source Voltage	$\pm 20$	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	544	A
$I_D$	Continuous Drain Current	$T_c=25^{\circ}C$	A
	Continuous Drain Current	$T_c=100^{\circ}C$	A
$P_D$	Maximum Power Dissipation	$T_c=25^{\circ}C$	W
$E_{AS}$	Avalanche Energy, Single pulse	1225	mJ

**Thermal Characteristics**

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	62.5	$^{\circ}C/W$
$R_{\theta JC}$	Thermal Resistance-Junction to Case	0.25	$^{\circ}C/W$

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

Note ② : UIS tested and pulse width are limited by maximum junction temperature  $150^{\circ}C$ .

Note ③ : Surface Mounted on  $1in^2$  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
<b>Static Electrical Characteristics</b>						
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	200	---	---	V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=200V, V_{GS}=0V$	---	---	1	$\mu A$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	2	3	4	V
$I_{GSS}$	Gate Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	$\pm 100$	nA
$R_{DS(on)}$	Drain-Source On-state Resistance	$V_{GS}=10V, I_D=40A$	---	11	15	m $\Omega$
<b>Dynamic Characteristics</b> <sup>⑤</sup>						
$R_G$	Gate Resistance	$V_{GS}=0V, V_{DS}=0V,$ Freq.=1MHz	---	2.1	---	$\Omega$
$C_{iss}$	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=100V,$ Freq.=1MHz	---	11550	---	pF
$C_{oss}$	Output Capacitance		---	810	---	
$C_{rss}$	Reverse Transfer Capacitance		---	320	---	
$T_{d(on)}$	Turn-on Delay Time	$V_{GS}=10V, V_{DD}=100V,$ $I_D=40A, R_G=6\Omega$	---	32	---	nS
$T_r$	Turn-on Rise Time		---	46	---	
$T_{d(off)}$	Turn-off Delay Time		---	95	---	
$T_f$	Turn-off Fall Time		---	20	---	
$Q_g$	Total Gate Charge	$V_{GS}=10V, V_{DS}=100V,$ $I_D=40A$	---	210	---	nC
$Q_{gs}$	Gate-Source Charge		---	42	---	
$Q_{gd}$	Gate-Drain Charge		---	68	---	
<b>Source-Drain Characteristics</b>						
$V_{SD}$	Diode Forward Voltage	$I_S=40A, V_{GS}=0V$	---	---	1.2	V
$t_{rr}$	Reverse Recovery Time	$I_F=40A, di_F/dt=100A/\mu s$	---	90	---	ns
$Q_{rr}$	Reverse Recovery Charge		---	320	---	nC

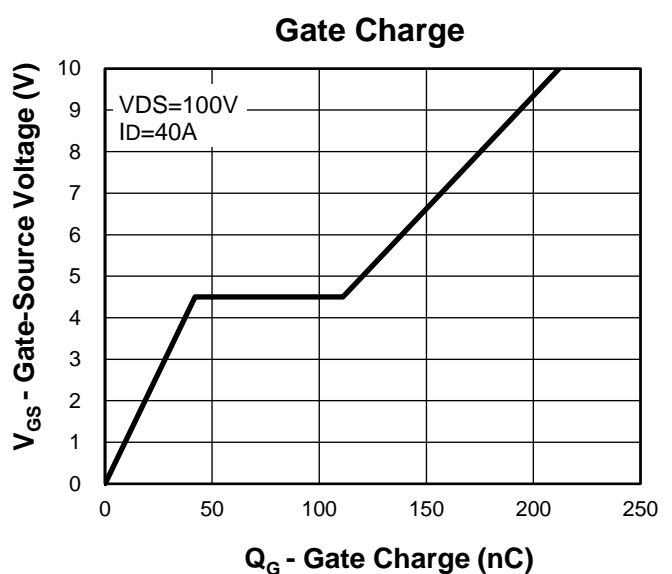
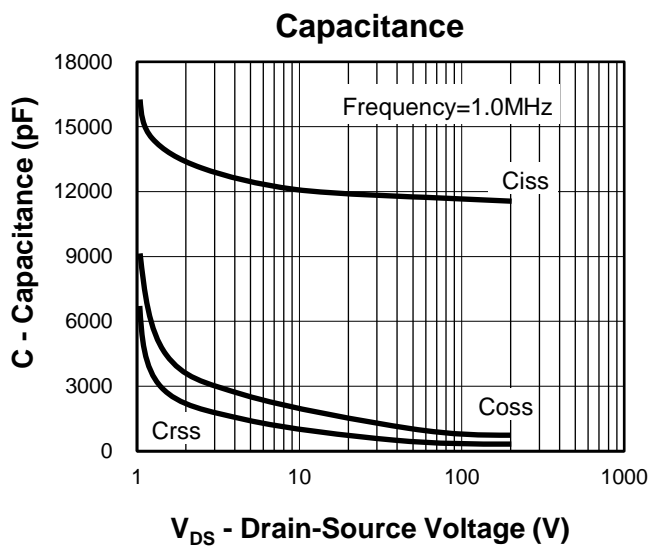
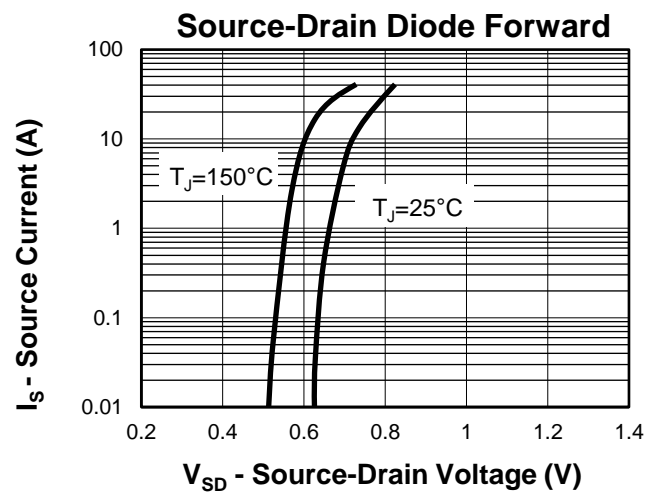
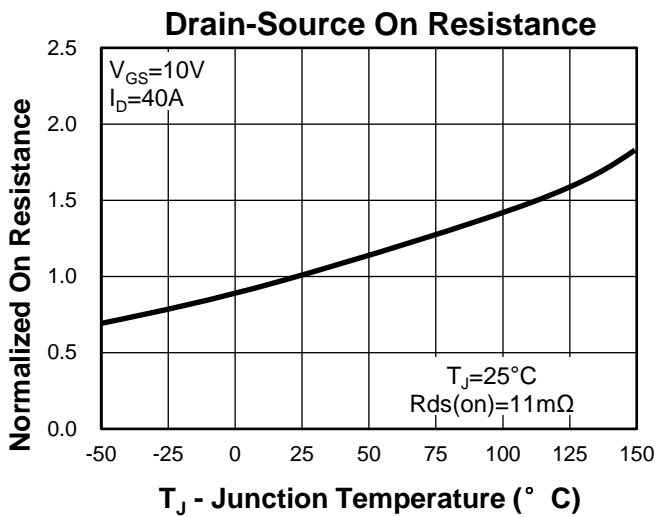
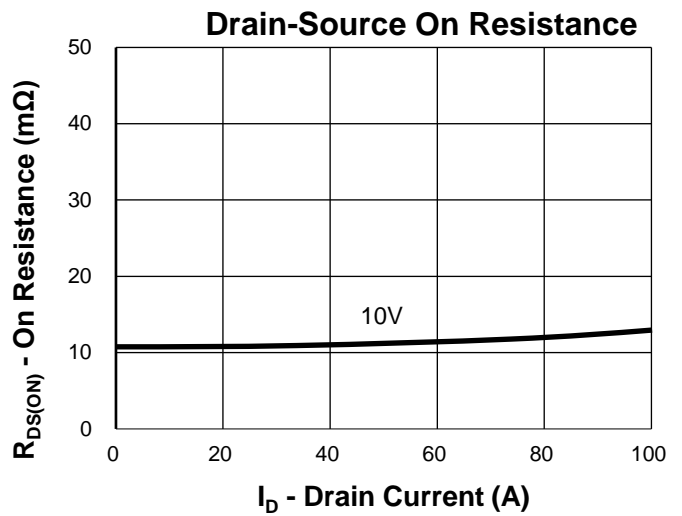
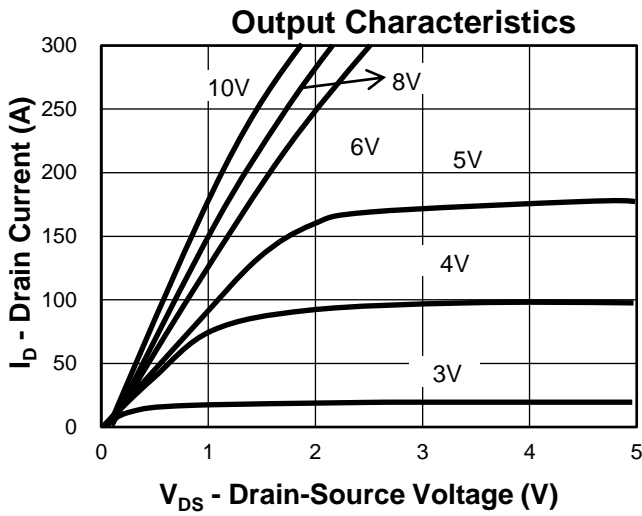
Note ④: Pulse test (pulse width $\leq 300\mu s$ , duty cycle $\leq 2\%$ ).

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



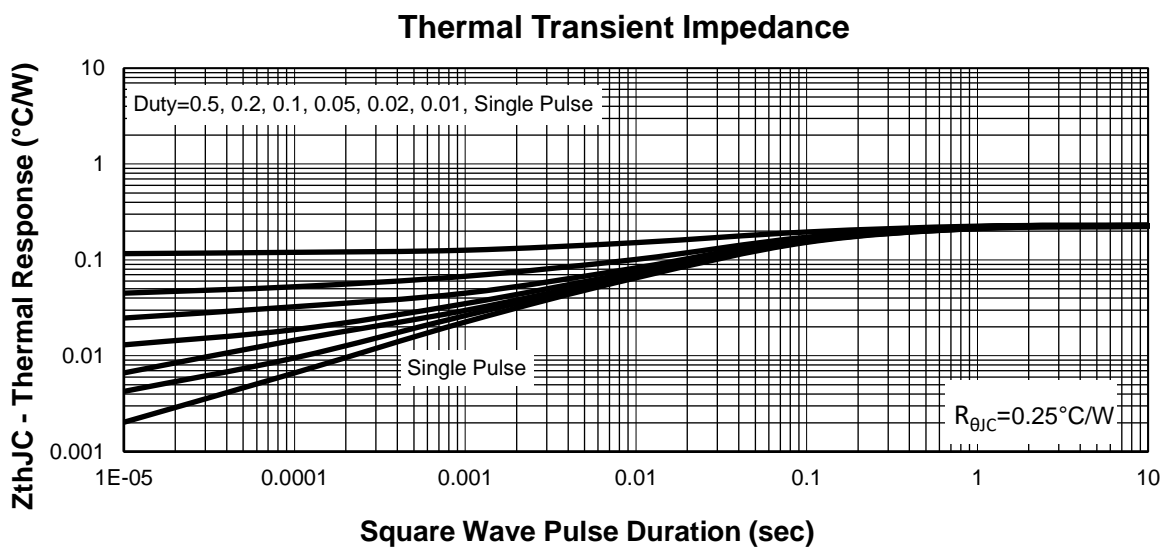
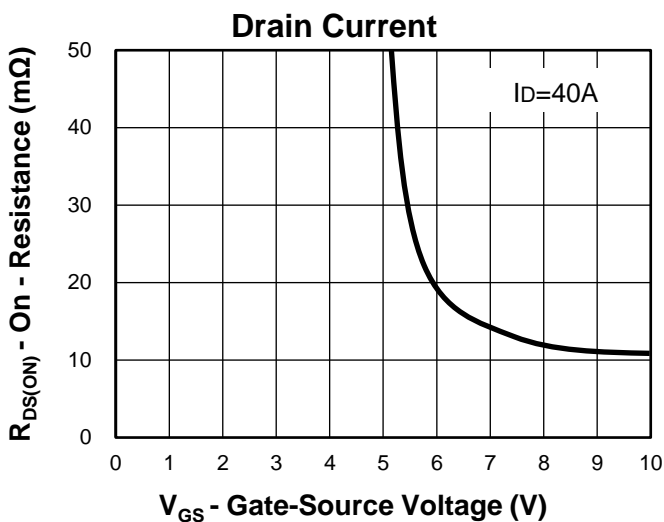
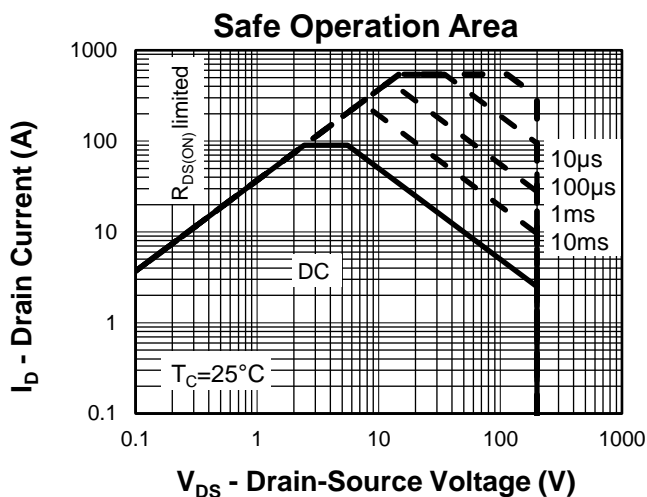
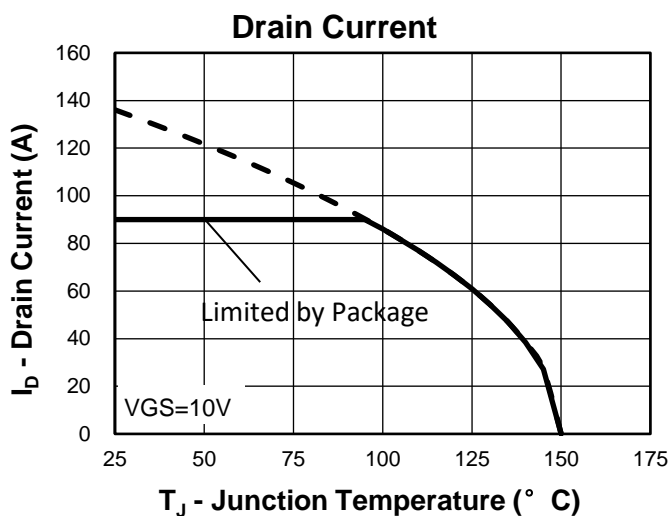
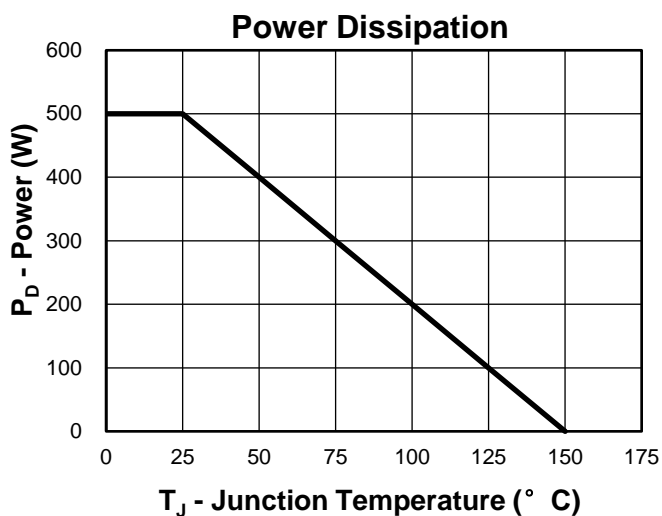
N-Channel Enhancement Mode MOSFET

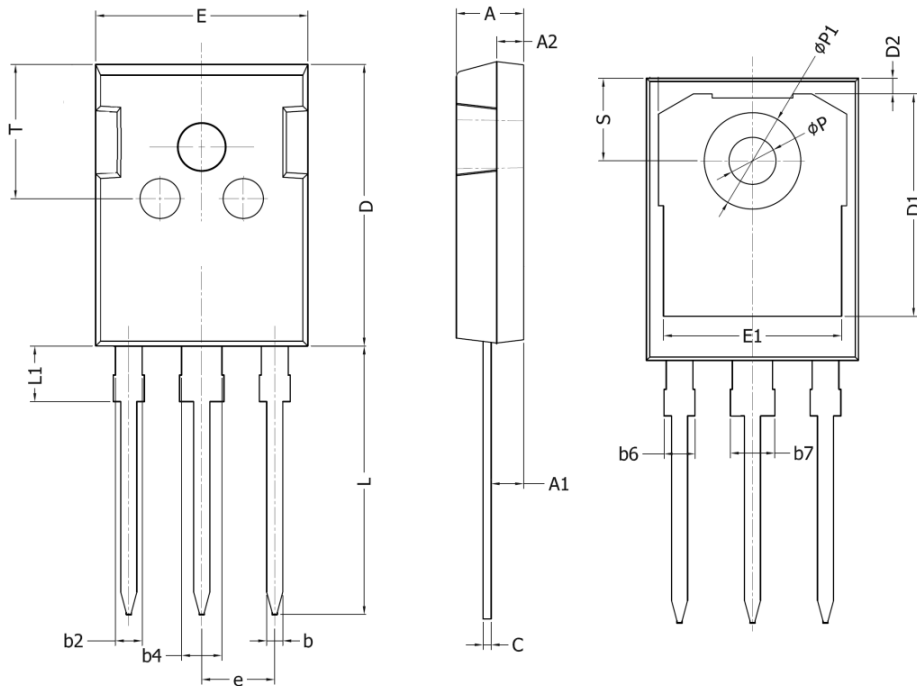
Typical Characteristics





N-Channel Enhancement Mode MOSFET



**N-Channel Enhancement Mode MOSFET**
**TO-247 Package Outline Dimensions**


Symbol	Dimensions In Millimeters	
	Min.	Max.
A	4.90	5.20
A1	2.31	2.51
A2	1.9	2.1
b	1.16	1.26
b2	1.96	2.06
b4	2.96	3.06
b6	-	2.25
b7	-	3.25
C	0.59	0.66
D	20.90	21.20
D1	16.25	16.85
D2	1.05	1.35
E	15.75	16.10
E1	13.00	13.60
e	5.436 BSC	
L	19.80	20.20
L1	-	4.30
P	3.40	3.60
P1	7.00	7.40
S	6.05	6.25
T	9.80	10.20