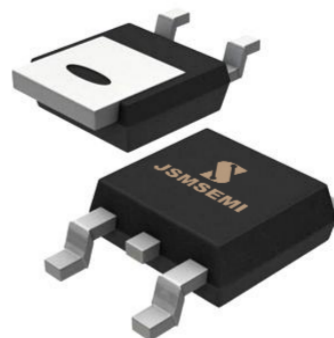


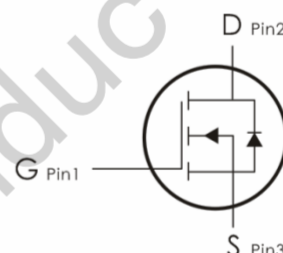
Description:

This N-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge. It can be used in a wide variety of applications.



Features:

- ◆ $V_{DS}=40V, I_D=60A, R_{DS(ON)} < 12m\Omega @ V_{GS}=10V$
- ◆ Low gate charge.
- ◆ Green device available.
- ◆ Advanced high cell density trench technology for ultra $R_{DS(ON)}$.
- ◆ Excellent package for good heat dissipation.



Absolute Maximum Ratings ($T_C=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	40	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_C=25^\circ\text{C}$	60	A
	Continuous Drain Current- $T_C=100^\circ\text{C}$	42	
	Pulsed Drain Current	200	
E_{AS}	Single Pulse Avalanche Energy ⁵	400	mJ
P_D	Power Dissipation	65	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +175	$^\circ\text{C}$

Thermal Characteristics:

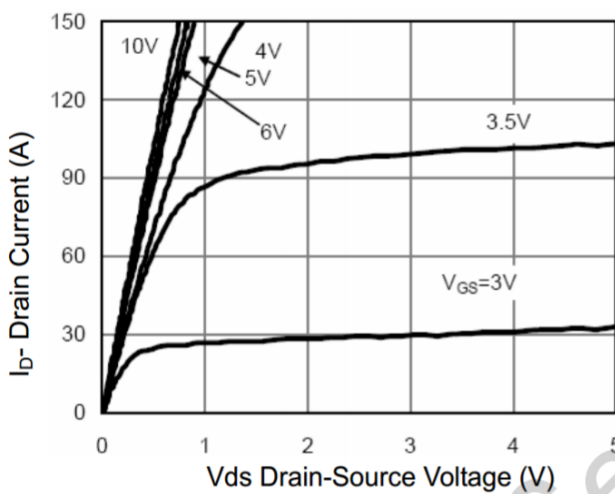
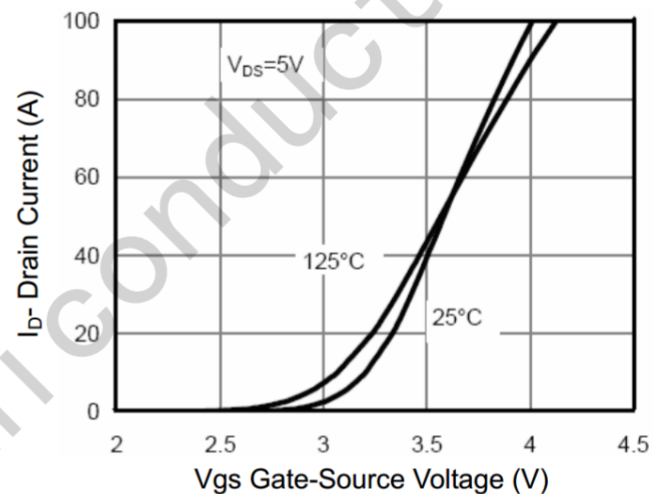
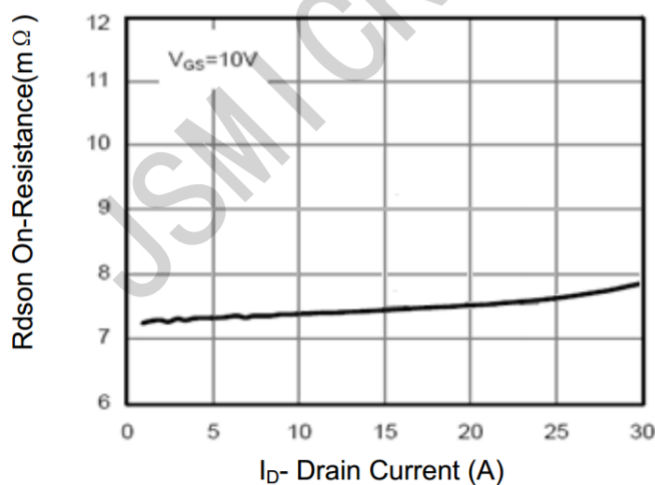
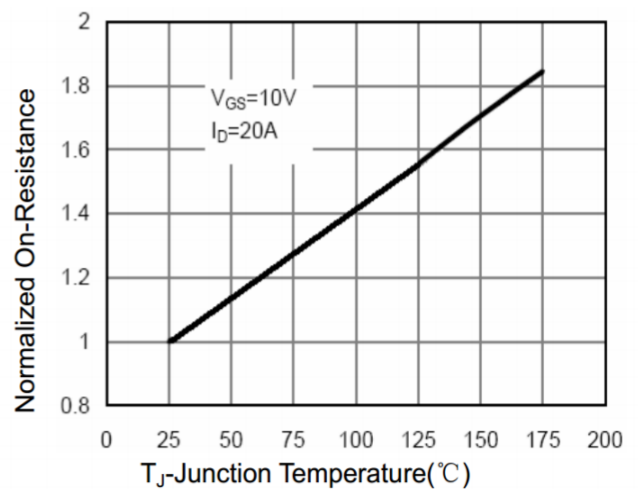
Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case ²	2.3	$^\circ\text{C}/\text{W}$

Electrical Characteristics ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	40	45	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =40V	---	---	1	μA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0A	---	---	±100	nA
On Characteristics ³						
V _{GS(th)}	GATE-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250μA	1.2	1.6	2.5	V
R _{DS(ON)}	Drain-Source On Resistance	V _{GS} =10V, I _D =20A	---	7.3	12	mΩ
G _{FS}	Forward Transconductance	V _{DS} =10V, I _D =20A	15	---	---	S
Dynamic Characteristics ⁴						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	1800	---	pF
C _{oss}	Output Capacitance		---	280	---	
C _{rss}	Reverse Transfer Capacitance		---	190	---	
Switching Characteristics ⁴						
t _{d(on)}	Turn-On Delay Time	V _{DD} =20V, I _D =2A, R _L =1ΩV G _S =10V, R _G =3Ω	---	6.4	---	ns
t _r	Rise Time		---	17.2	---	ns
t _{d(off)}	Turn-Off Delay Time		---	29.6	---	ns
t _f	Fall Time		---	16.8	---	ns
Q _g	Total Gate Charge	V _{GS} =10V, V _{DS} =20V, I _D =20A	---	29	---	nC
Q _{gs}	Gate-Source Charge		---	4.5	---	nC
Q _{gd}	Gate-Drain “ Miller” Charge		---	6.4	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Source-Drain Diode Forward Voltage ³	V _{GS} =0V, I _S =10A	---	---	1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300 \mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production
5. EAS condition : $T_j = 25^\circ C$, $V_{DD} = 20V$, $V_G = 10V$, $L = 1mH$, $R_g = 25\Omega$.

Typical Characteristics ($T_c = 25^\circ C$ unless otherwise noted)

Figure 1 Output Characteristics

Figure 2 Transfer Characteristics

Figure 3 Rdson- Drain Current

Figure 4 Rdson-Junction Temperature

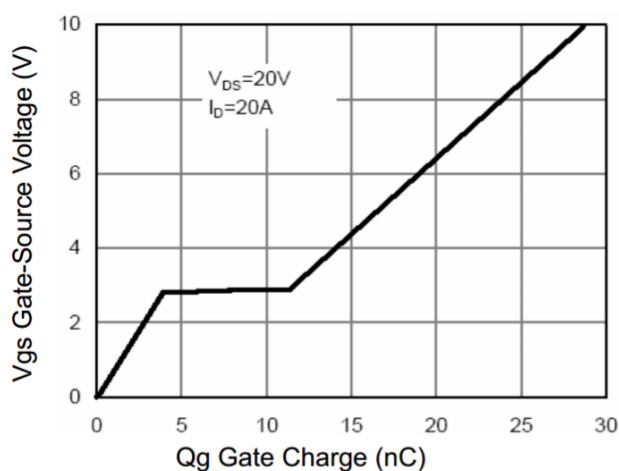


Figure 5 Gate Charge

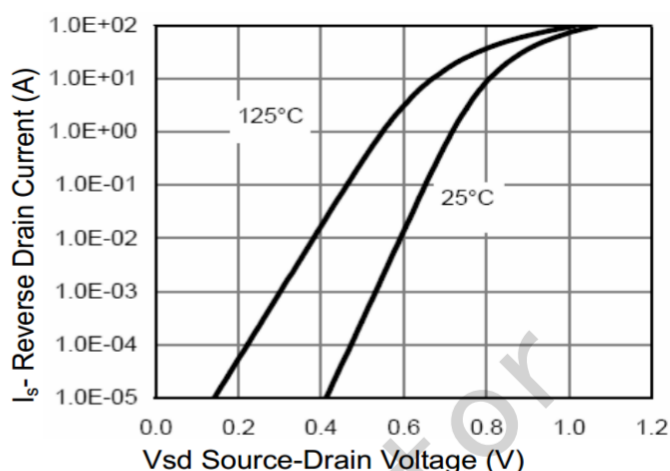


Figure 6 Source- Drain Diode Forward

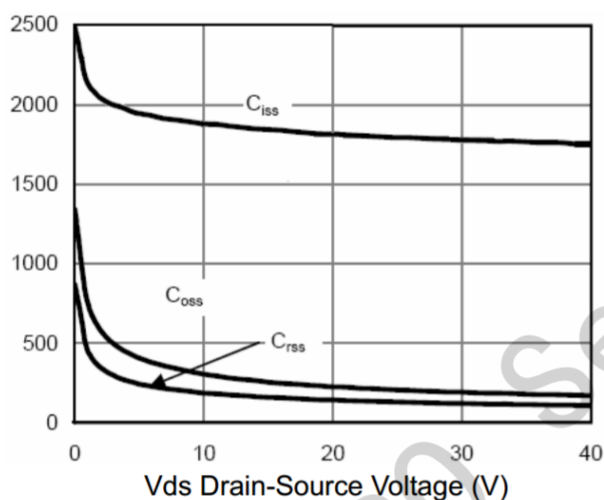


Figure 7 Capacitance vs Vds

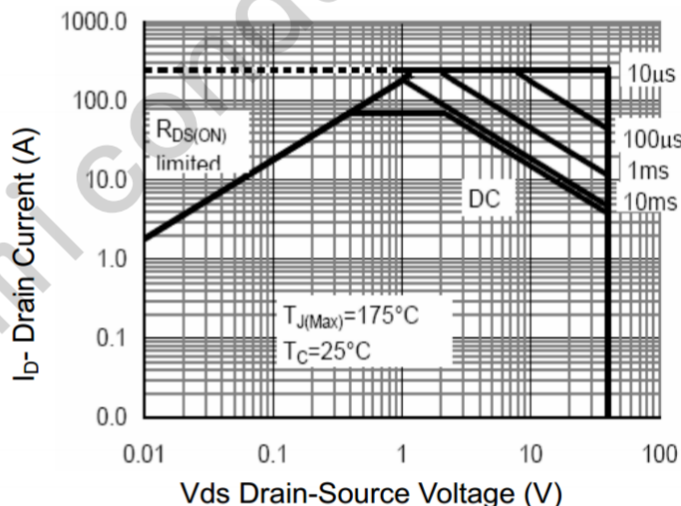


Figure 8 Safe Operation Area

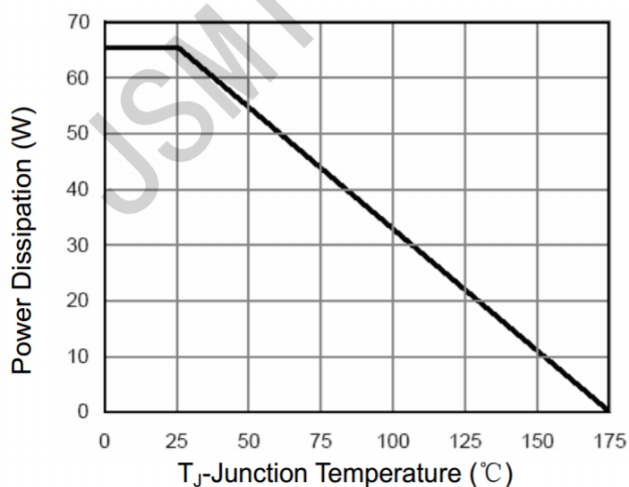


Figure 9 Power De-rating

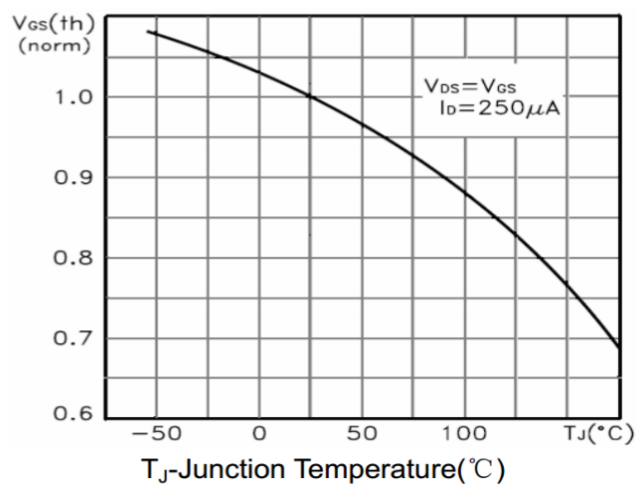


Figure 10 $V_{GS(th)}$ vs Junction Temperature

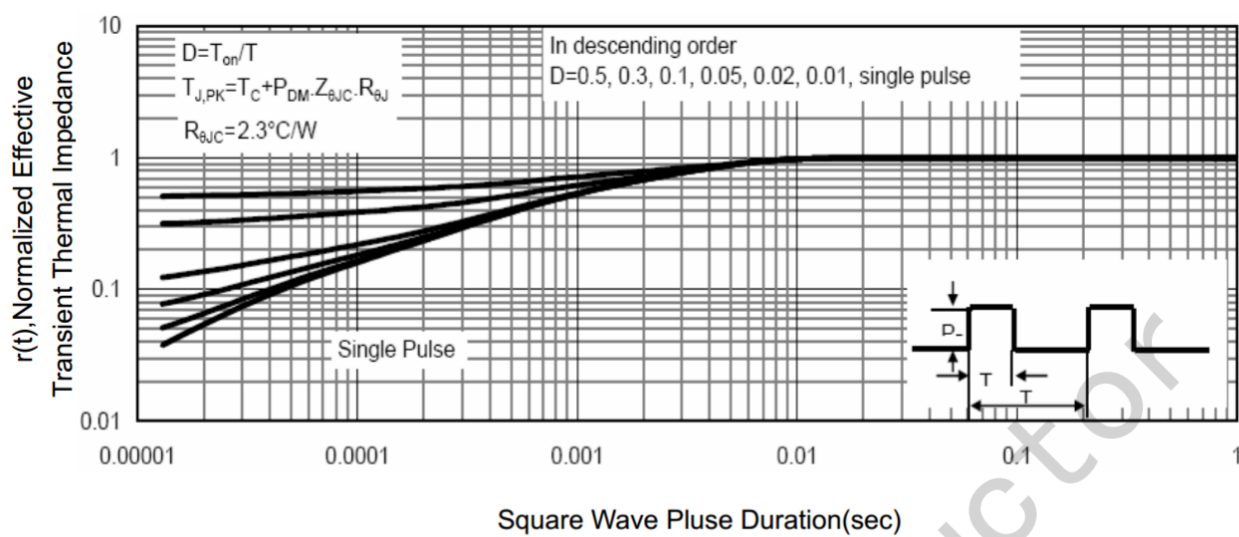
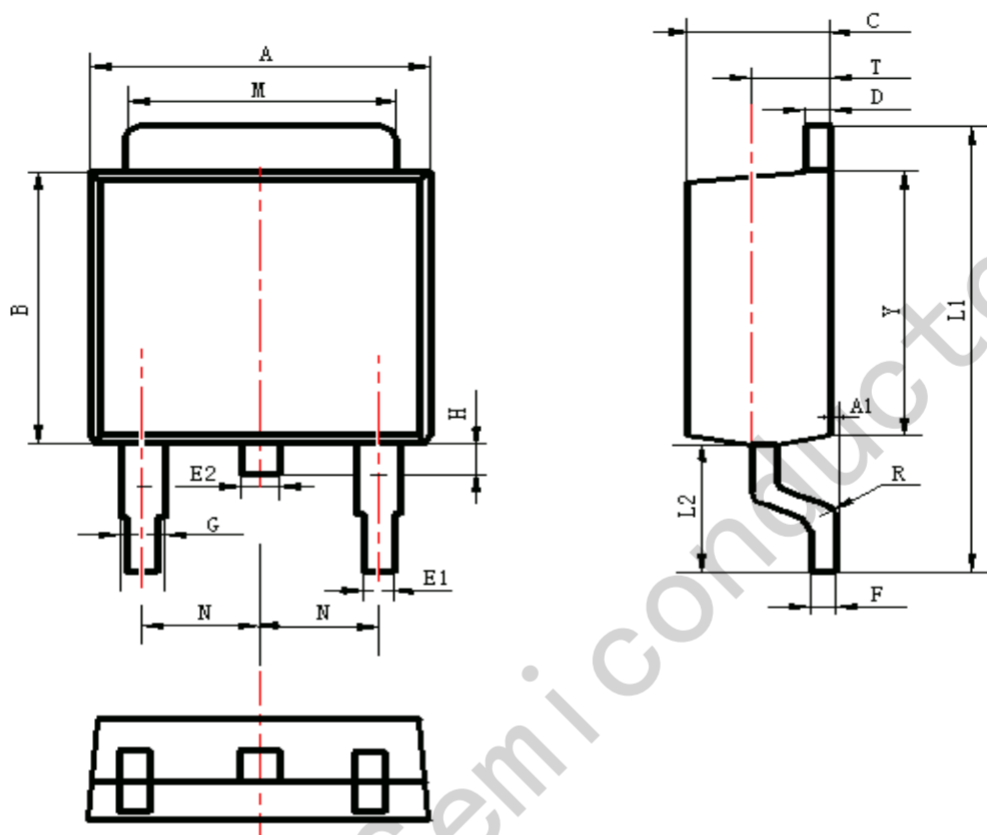


Figure 11 Normalized Maximum Transient Thermal Impedance

Package Information

TO-252



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	6.30	6.90	0.248	0.272
A1	0.00	0.16	0.000	0.006
B	5.70	6.30	0.224	0.248
C	2.10	2.50	0.083	0.098
D	0.30	0.70	0.012	0.028
E1	0.60	0.90	0.024	0.035
E2	0.70	1.00	0.028	0.039
F	0.30	0.60	0.012	0.024
G	0.70	1.20	0.028	0.047
L1	9.60	10.50	0.378	0.413
L2	2.70	3.10	0.106	0.122
H	0.40	1.00	0.016	0.039
M	5.10	5.50	0.201	0.217
N	2.09	2.49	0.082	0.098
R	0.30		0.012	
T	1.40	1.60	0.055	0.063
Y	5.10	6.30	0.201	0.248

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFETs](#) category:

Click to view products by [JSMSEMI](#) manufacturer:

Other Similar products are found below :

[MCH3443-TL-E](#) [MCH6422-TL-E](#) [NTNS3A92PZT5G](#) [IRFD120](#) [2SK2464-TL-E](#) [2SK3818-DL-E](#) [2SJ277-DL-E](#) [2SK2267\(Q\)](#) [MIC4420CM-TR](#) [IRFS350](#) [IPS70R2K0CEAKMA1](#) [AON6932A](#) [2SK2614\(TE16L1,Q\)](#) [DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [SCM040600](#) [NTE2384](#) [2N7000TA](#) [DMN2080UCB4-7](#) [DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#) [STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN13M9UCA6-7](#) [STU7N60DM2](#) [DMTH10H4M6SPS-13](#) [DMN2990UFB-7B](#) [2N7002W-G](#) [MCQ7328-TP](#) [IPB45P03P4L11ATMA2](#) [BXP4N65F](#) [BXP2N20L](#) [BXP2N65D](#) [TSM60NB380CP](#) [ROG](#) [SLF10N65ABV2](#) [IRF9395MTRPBF](#) [FCMT080N65S3](#) [NTD5C632NLT4G](#) [NTMFS0D55N03CGT1G](#) [NTMFS1D15N03CGT1G](#) [NTMTS0D4N04CTXG](#) [NTMYS2D1N04CLTWG](#) [NVD360N65S3T4G](#) [NVD5C464NLT4G](#) [NVMTS001N06CLTXG](#)