

N-Channel Enhancement Mode Power MOSFET

● Features

$V_{DS} = 30V$,

$I_D = 68A$

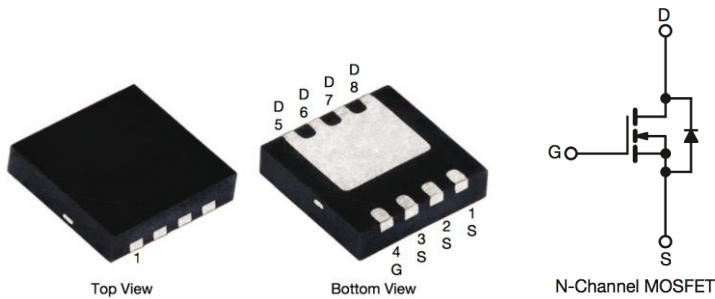
$R_{DS(ON)} @V_{GS} = 10V$, TYP 2.9m Ω

$R_{DS(ON)} @V_{GS} = 4.5V$, TYP 4.8m Ω

● General Description

- load switch
- battery protection applications

● Pin Configurations



TDFN3.3*3.3-8L

● Absolute Maximum Ratings @ $T_A=25^\circ C$ unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current (Continuous) *AC	$T_C=25^\circ C$	I_D	68	A
	$T_C=70^\circ C$		54.5	
Drain Current (Pulse) *B		I_{DM}	150	A
Power Dissipation	$T_C=25^\circ C$	P_D	26	W
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	$^\circ C$

● Thermal Resistance Ratings

Parameter		Symbol	Maximum	Unit
Maximum Junction-to-Ambient	$t \leq 10s$	R_{thJA}	34	$^\circ C/W$
Maximum Junction-to-Case (Drain)	Steady State	R_{thJC}	4.8	

● Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$	--	--	1	μA
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{GS} = V_{DS}, I_{DS} = 250\mu A$	1	1.6	2.5	V
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	--	--	± 100	nA
Drain-Source On-state Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$	--	2.9	4	m Ω
	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 10A$	--	4.8	6	m Ω
Diode Forward Voltage	V_{SD}	$I_{SD} = 1A, V_{GS} = 0V$	--	0.75	1.2	V
Diode Forward Current *AC	I_S	$T_C = 25^{\circ}\text{C}$	--	--	34.7	A
Switching						
Total Gate Charge	Q_g	$V_{GS} = 10V, V_{DS} = 24V, I_D = 27A$	--	86	--	nC
Gate-Source Charge	Q_{gs}		--	9.2	--	nC
Gate-Drain Charge	Q_{gd}		--	18.6	--	nC
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 15V, V_{GS} = 10V,$ $R_L = 1.11\Omega, R_g = 4.7\Omega,$ $I_D = 13.5A$	--	5.7	--	ns
Turn-on Rise Time	t_r		--	14	--	ns
Turn-off Delay Time	$t_{d(off)}$		--	63.7	--	ns
Turn-Off Fall Time	t_f		--	28.4	--	ns
Dynamic						
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1.0\text{MHz}$	--	3690	--	pF
Output Capacitance	C_{oss}		--	530	--	pF
Reverse Transfer Capacitance	C_{rss}		--	459	--	pF

A: The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The value in any given application depends on the user's specific board design.

B: Repetitive rating, pulse width limited by junction temperature.

C: The current rating is based on the $\leq 10\text{s}$ junction to ambient thermal resistance rating, package limited 40A

● Typical Performance Characteristics ((T_J = 25 °C, unless otherwise noted))

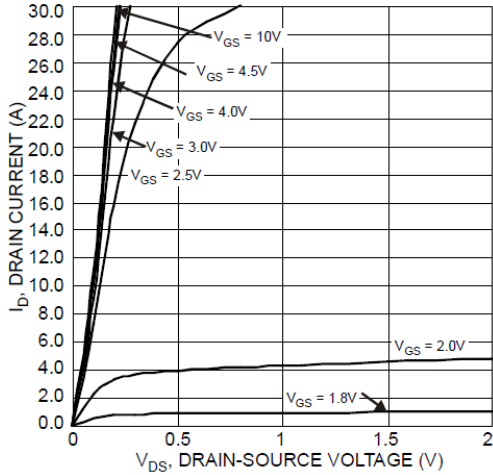


Figure 1 Typical Output Characteristic

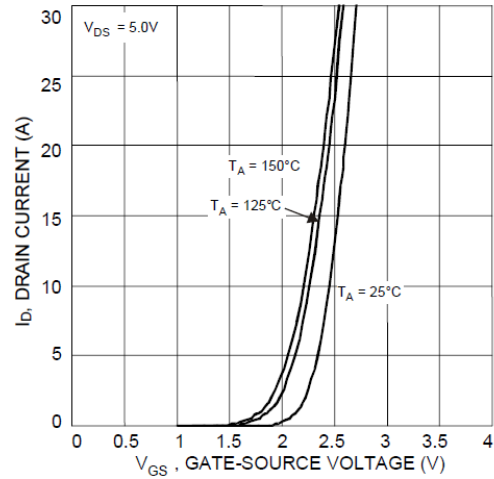


Figure 2 Typical Transfer Characteristics

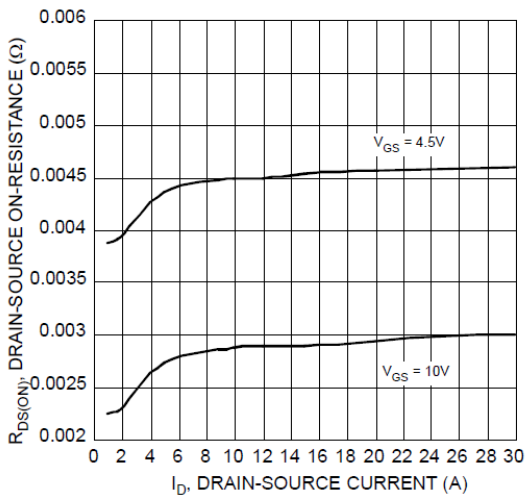


Figure 3 Typical On-Resistance vs. Drain Current and Gate Voltage

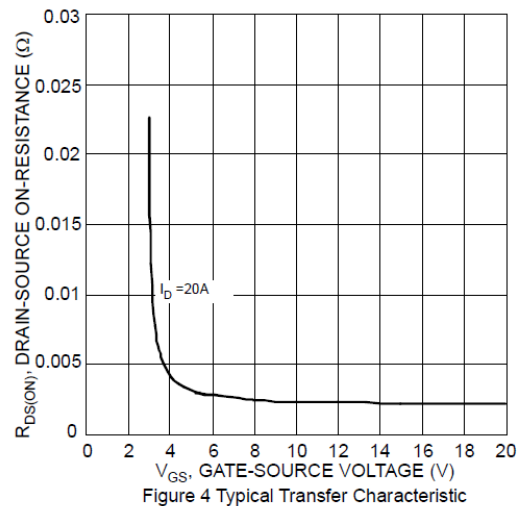


Figure 4 Typical Transfer Characteristic

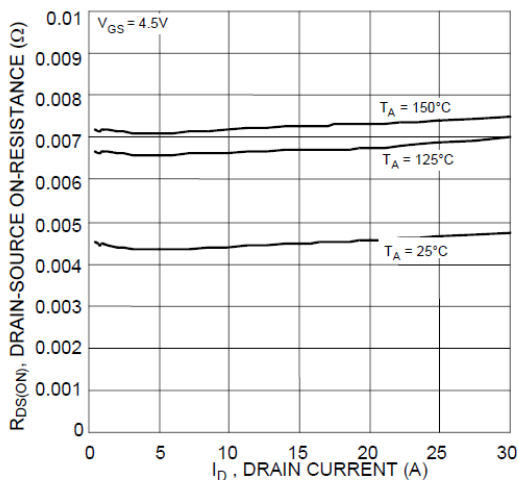


Figure 5 Typical On-Resistance vs. Drain Current and Temperature

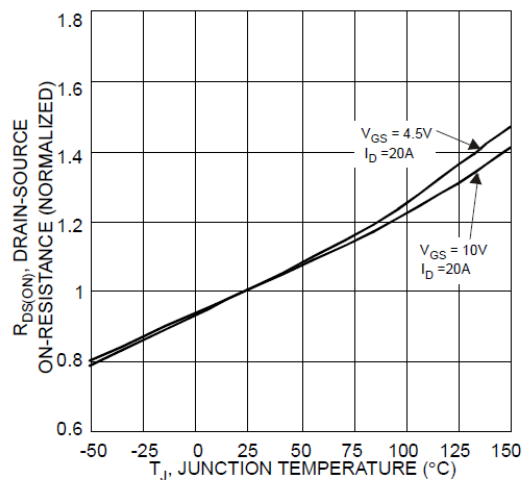


Figure 6 On-Resistance Variation with Temperature

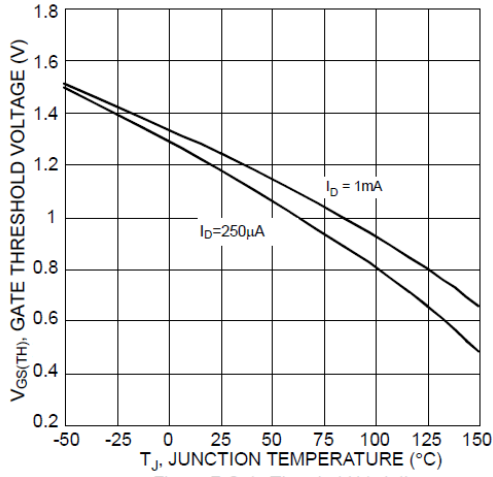


Figure 7 Gate Threshold Variation vs. Junction Temperature

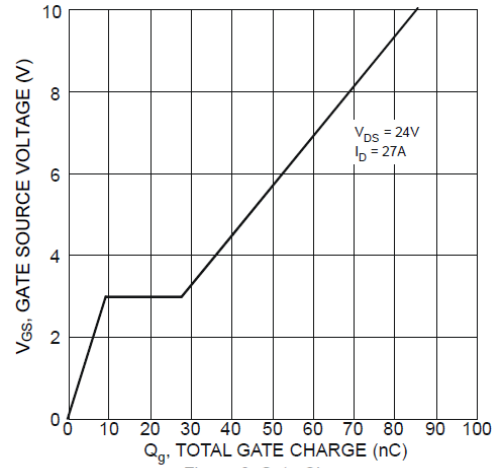


Figure 8 Gate Charge

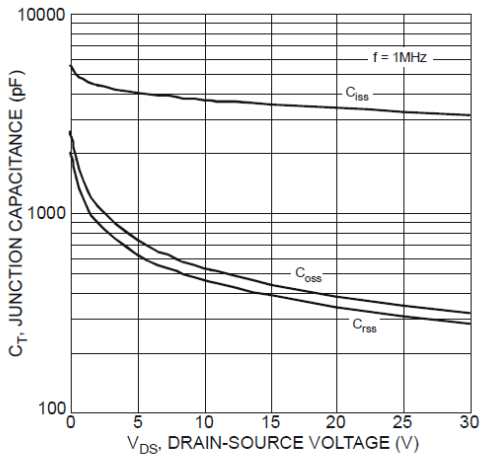


Figure 9 Typical Junction Capacitance

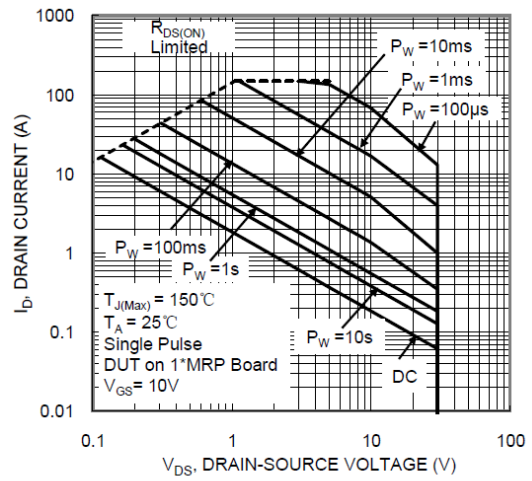


Figure 10. SOA, Safe Operation Area

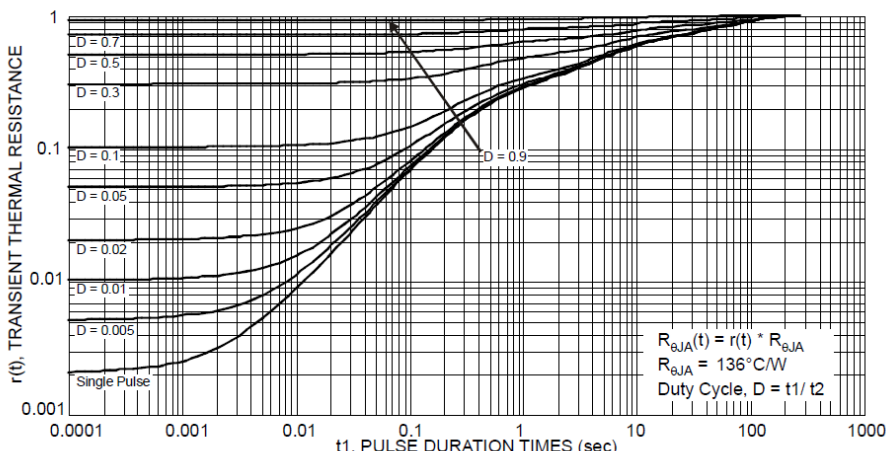
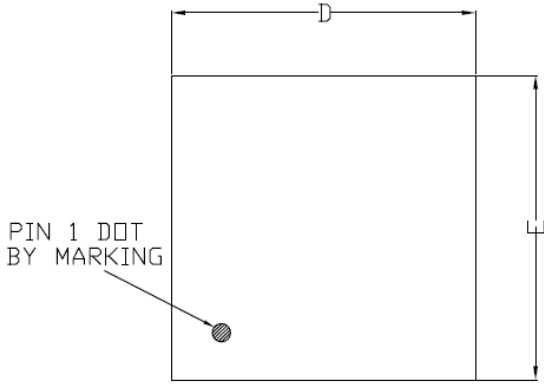


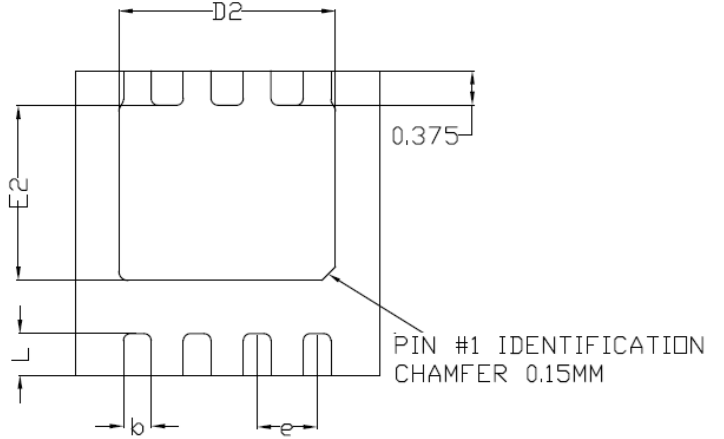
Figure 11 Transient Thermal Resistance

● Package Information

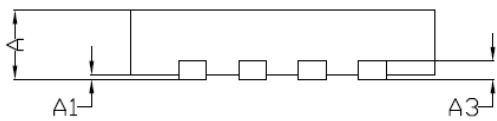
TDFN3.3*3.3-8L



TOP VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSIONS(MM)			
PKG. REF.	UT:ULTRA THIN		
	MIN.	NOM.	MAX
A	0.70	0.75	0.80
A1	0.00	-	0.05
A3	0.20 REF.		
D	3.25	3.30	3.35
E	3.25	3.30	3.35
D2	2.30	2.35	2.40
E2	1.85	1.90	1.95
b	0.25	0.30	0.35
L	0.35	0.45	0.55
e	0.65 BSC		

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

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

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

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [BUK455-60A/B](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#) [IPS70R2K0CEAKMA1](#) [SQD23N06-31L-GE3](#)
[TK16J60W,S1VQ\(O](#) [2SK2614\(Te16L1,Q\)](#) [DMN1017UCP3-7](#) [DMN1053UCP4-7](#) [SQJ469EP-T1-GE3](#) [NTE2384](#) [DMC2700UDMQ-7](#)
[DMN2080UCB4-7](#) [DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [DMN2990UFB-7B](#)
[IPB80P04P405ATMA2](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [MCQ7328-TP](#) [BXP7N65D](#) [BXP4N65F](#) [AOL1454G](#) [WMJ80N60C4](#) [BXP2N20L](#)
[BXP2N65D](#) [BXT1150N10J](#) [BXT1700P06M](#) [TSM60NB380CP ROG](#) [RQ7L055BGTCR](#) [DMNH15H110SK3-13](#) [SLF10N65ABV2](#)
[BSO203SP](#) [BSO211P](#) [IPA60R230P6](#) [IPA60R460CE](#)