N-Channel Enhancement Mode Power MOSFET

Features

V_{DS} = 100V,

I_D = 15.2A

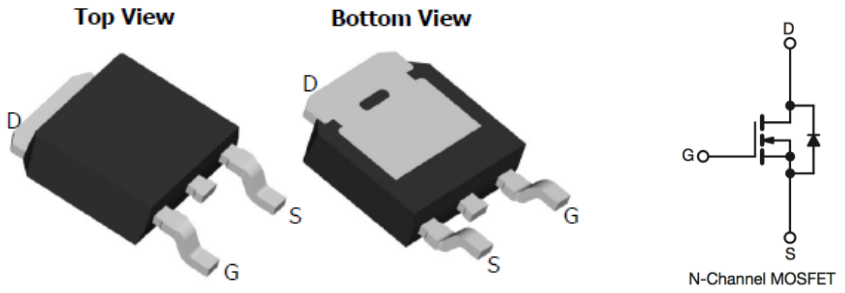
$R_{DS(ON)}$ @V_{GS}= 10V, TYP 68mΩ

$R_{DS(ON)}$ @V_{GS}= 4.5V, TYP 75mΩ

General Description

- DC-DC Converters
- DC-AC Inverters
- Motor Drives

Pin Configurations



TO252

Absolute Maximum Ratings @T_A=25℃ unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DSS}	100	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current (Continuous) *AC	T_C=25°C	I_D	15.2	A
	T_C=100°C		9.6	
Drain Current (Pulse) *B		I_{DM}	50	A
Power Dissipation	T_C=25°C	P_D	42	W
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	℃

Thermal Resistance Ratings

Parameter		Symbol	Maximum	Unit
Maximum Junction-to-Ambient *AC	t≤10s	R_{thJA}	60	°C/W
Maximum Junction-to-Case (Drain)	Steady State	R_{thJC}	3	

- **Electrical Characteristics** @T_A=25℃ unless otherwise noted

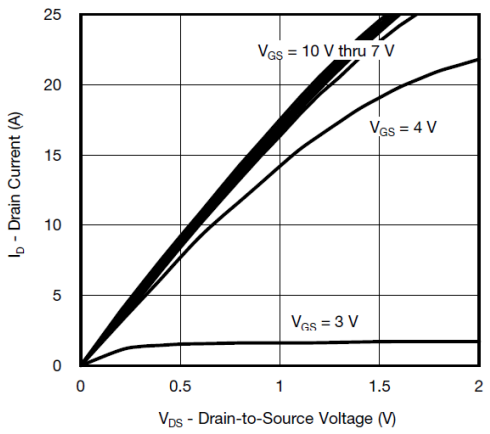
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D= 250μA	100	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 80V, V_{GS} = 0V	--	--	1	μA
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS} = V_{DS}, I_{DS}= 250μA	1	1.7	2.5	V
Gate Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	--	--	±100	nA
Drain-Source On-state Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 5A	--	68	90	mΩ
	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 3A	--	75	100	mΩ
Diode Forward Voltage	V_{SD}	I_{SD}= 1A , V_{GS}=0V	--	0.74	1.2	V
Diode Forward Current *AC	I_S	T_C =25°C	--	--	15.2	A
Switching						
Total Gate Charge	Q_g	V_{GS}=10V, V_{DS}=50V, I_D=6.6A	--	19.7	--	nC
Gate-Source Charge	Q_{gs}		--	3.5	--	nC
Gate-Drain Charge	Q_{gd}		--	4.2	--	nC
Turn-on Delay Time	$t_{d(on)}$	V_{GEN}=10V, V_{DD}=50V, R_L=9.6Ω,R_G=1Ω, I_D=5.2A	--	8	--	ns
Turn-on Rise Time	t_r		--	11	--	ns
Turn-off Delay Time	$t_{d(off)}$		--	17	--	ns
Turn-Off Fall Time	t_f		--	6	--	ns
Dynamic						
Input Capacitance	C_{iss}	V_{DS}=50V,V_{GS}=0V, f=1.0MHz	--	855	--	pF
Output Capacitance	C_{oss}		--	84	--	pF
Reverse Transfer Capacitance	C_{rss}		--	41	--	pF

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

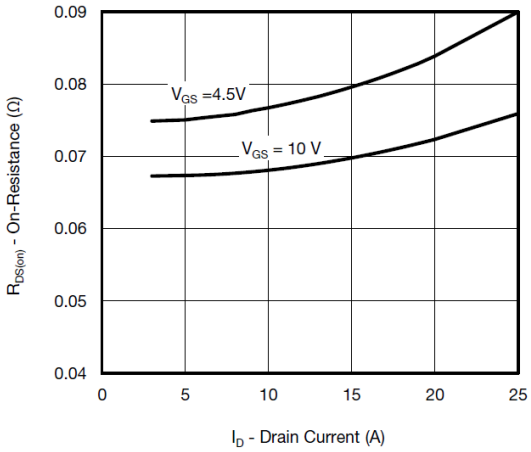
B: Repetitive rating, pulse width limited by junction temperature.

C: The current rating is based on the t≤ 10s junction to ambient thermal resistance rating.

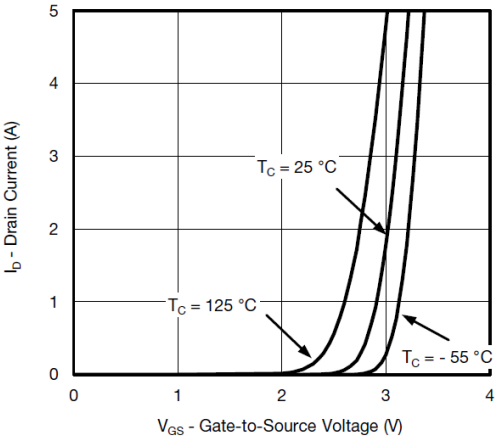
- **Typical Performance Characteristics（(TJ = 25 °C, unless otherwise noted)）**



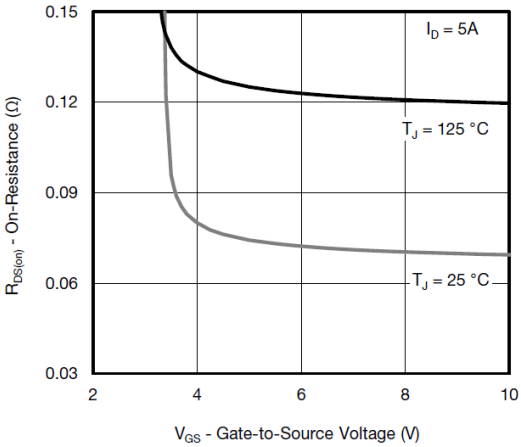
Output Characteristics



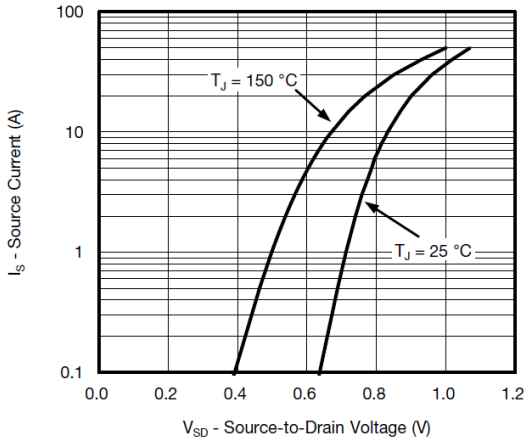
On-Resistance vs. Drain Current



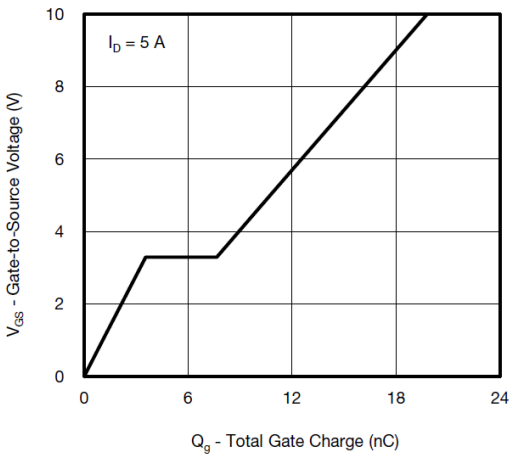
Transfer Characteristics



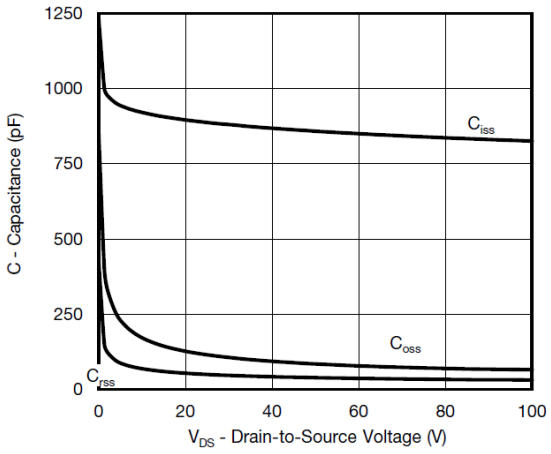
On-Resistance vs. Gate-to-Source Voltage



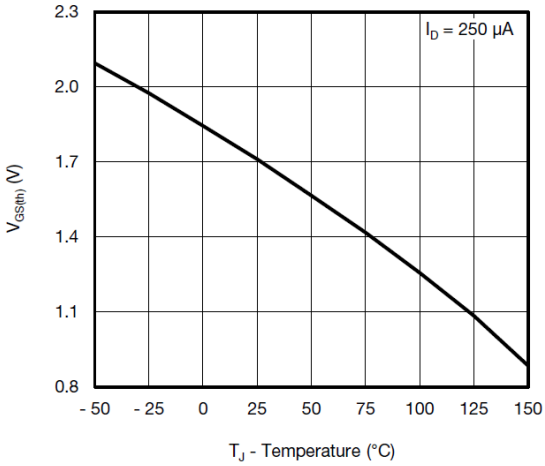
Source-Drain Diode Forward Voltage



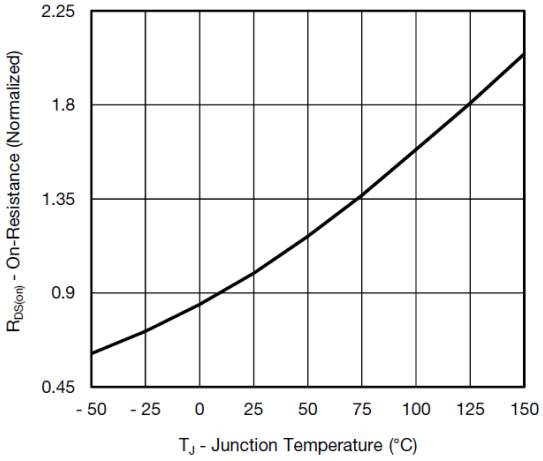
Gate Charge



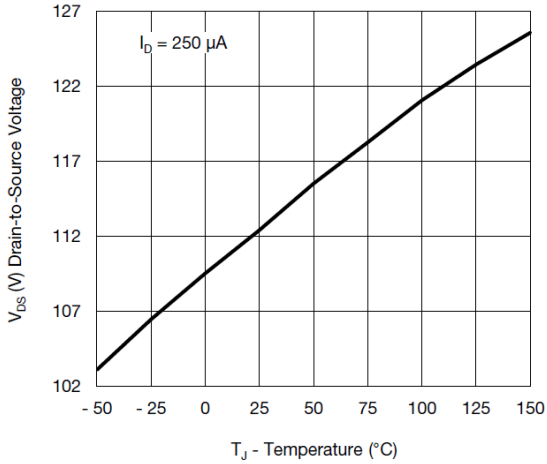
Capacitance



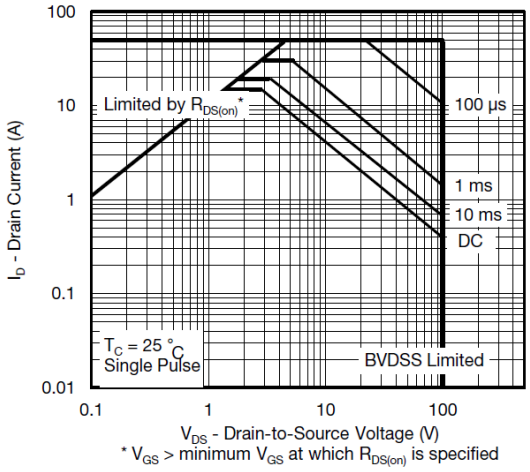
Threshold Voltage



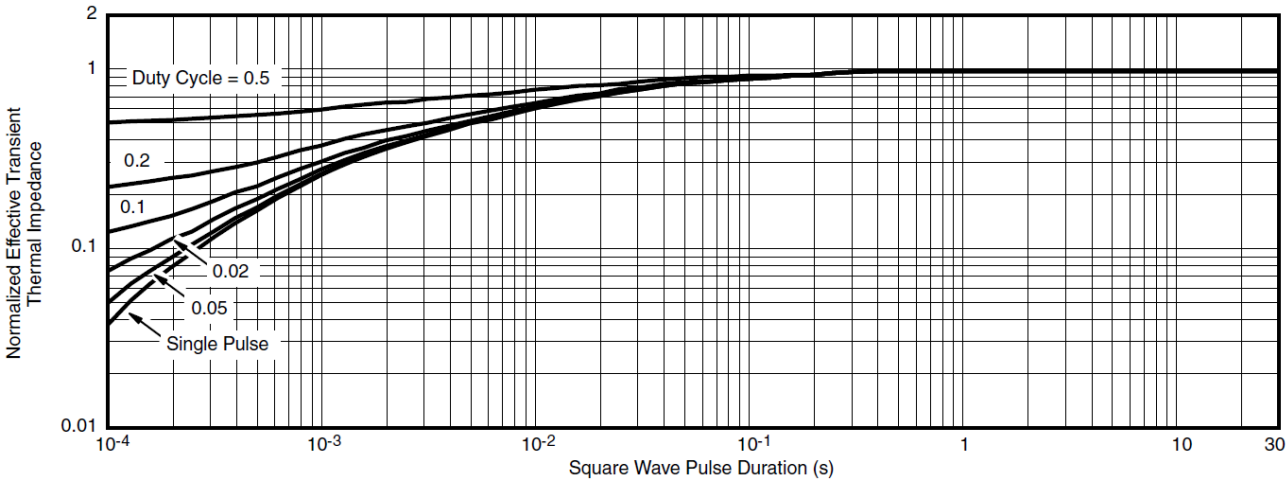
On-Resistance vs. Junction Temperature



Drain Source Breakdown vs. Junction Temperature

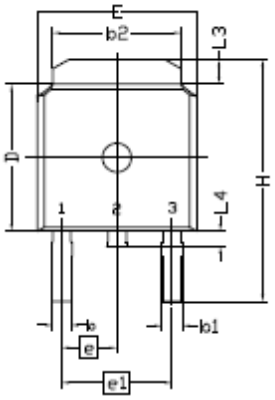


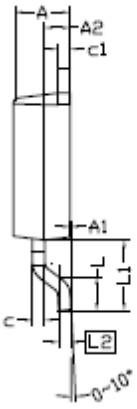
Safe Operating Area

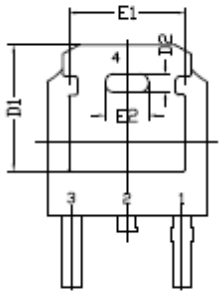


Normalized Thermal Transient Impedance, Junction-to-Case

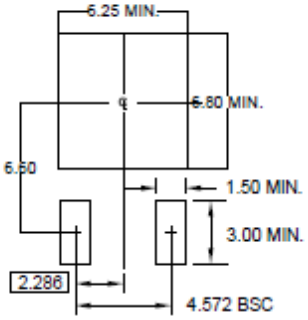
- **Package Information**







RECOMMENDED LAND PATTERN



UNIT: mm

NOTE
1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS. MOLD FLASH SHOULD BE LESS THAN 6 MILS.
2. DIMENSION L IS MEASURED IN GAUGE PLANE
3. TOLERANCE 0.10 mm UNLESS OTHERWISE SPECIFIED
4. CONTROLLING DIMENSION IS MILLIMETER. CONVERTED INCH DIMENSIONS ARE NOT NECESSARILY EXACT.
5. REFER TO JEDEC TO-252 (AA)

SYMBOL	DIMENSION IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	2.184	2.286	2.388	0.086	0.090	0.094
A1	0.000	---	0.127	0.000	---	0.005
A2	0.889	1.041	1.143	0.035	0.041	0.045
b	0.635	0.762	0.889	0.025	0.030	0.035
b1	0.762	0.840	1.143	0.030	0.033	0.045
b2	4.953	5.340	5.461	0.195	0.210	0.215
c	0.450	0.508	0.610	0.018	0.020	0.024
c1	0.450	0.508	0.610	0.018	0.020	0.024
D	5.969	6.096	6.223	0.235	0.240	0.245
D1	5.210	5.249	5.380	0.205	0.207	0.212
D2	0.662	0.762	0.862	0.026	0.030	0.034
E	6.350	6.604	6.731	0.250	0.260	0.265
E1	4.318	4.826	4.901	0.170	0.190	0.193
E2	1.678	1.778	1.878	0.066	0.070	0.074
e	2.286 BSC			0.090 BSC		
e1	4.572 BSC			0.180 BSC		
H	9.398	10.033	10.414	0.370	0.395	0.410
L	1.270	1.520	2.032	0.050	0.060	0.080
L1	2.921 REF.			0.115REF.		
L2	0.408	0.508	0.608	0.016	0.020	0.024
L3	0.889	1.016	1.270	0.035	0.040	0.050
L4	0.635	---	1.016	0.025	---	0.040

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 :

614233C 648584F IRFD120 IRFF430 JANTX2N5237 2N7000 FCA20N60_F109 FDZ595PZ AOD464 2SK2267(Q) 2SK2545(Q,T) 405094E 423220D MIC4420CM-TR VN1206L 614234A 715780A SSM6J414TU,LF(T 751625C PSMN4R2-30MLD TK31J60W5,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7 EFC2J004NUZTDG FCAB21350L1 P85W28HP2F-7071 DMN1053UCP4-7 NTE2384 NTE2969 NTE6400A DMN2080UCB4-7 DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 SSM6P54TU,LF DMP22D4UFO-7B IPS60R3K4CEAKMA1 DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 STU5N65M6 C3M0021120D DMN13M9UCA6-7 BSS340NWH6327XTSA1 MCM3400A-TP DMTH10H4M6SPS-13 IRF40SC240ARMA1 IPS60R1K0PFD7SAKMA1 IPS60R360PFD7SAKMA1 IPS60R600PFD7SAKMA1