Description

The WSF45P10DN56 uses advanced trench technology and design to provide excellent RDS(ON) with low gate charge. It can be used in a wide variety of applications.

BVDSS	RDS(ON)	ID
-100V	62 mΩ	-27.5A

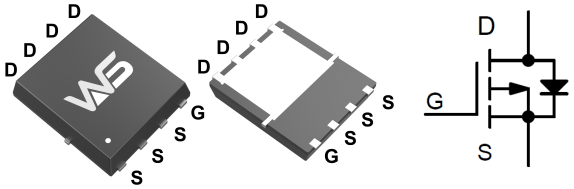
Application

- Portable equipment and battery powered systems

Features

- Super high dense cell design
- Advanced trench process technology
- Reliable and rugged
- High density cell design for ultra low On-Resistance

DFN5X6-8 Pin Configuration



Absolute Maximum Ratings @TA=25℃ unless otherwise noted

Symbol	Parameter		Ratings	Unit
V_{DSS}	Drain-Source Voltage		-100	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Drain Current (Continuous) *C	T_C=25°C	-27.5	A
		T_C=100°C	-17.4	
I_{DM}	Drain Current (Pulse) *B		-110	A
P_D	Power Dissipation	T_C=25°C	104	W
T_J/T_{STG}	Operating Temperature/ Storage Temperature		-55~150	℃

Thermal Resistance Ratings

Symbol	Parameter		Maximum	Unit
R_{thJC}	Maximum Junction-to-Case (Drain) *A	Steady State	1.2	°C/W

Electrical Characteristics @T_A=25℃ unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D= -250μA	-100	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -80V, V_{GS} = 0V	--	--	-1	μA
$V_{GS(TH)}$	Gate Threshold Voltage	V_{GS} = V_{DS}, I_{DS}= -250μA	-1	--	-2.5	V
I_{GSS}	Gate Leakage Current	V_{GS}= 20V, V_{DS}=0V	--	--	100	nA
$R_{DS(on)}$	Drain-Source On-state Resistance	V_{GS} = -10V, I_D = -20A	--	62	81	mΩ
$R_{DS(on)}$		V_{GS} = -6V, I_D = -15A	--	65	84.5	mΩ
$R_{DS(on)}$		V_{GS} = -4.5V, I_D = -15A	--	70	91	mΩ
V_{SD}	Diode Forward Voltage	I_{SD}= -1A , V_{GS}=0V	--	--	-1.2	V
I_S	Diode Forward Current *C	T_C =25°C	--	--	-27.5	A
Q_g	Total Gate Charge	V_{GS}=-10V, V_{DS}=-80V, I_D=-18A	--	75	--	nC
Q_{gs}	Gate-Source Charge		--	9	--	nC
Q_{gd}	Gate-Drain Charge		--	18	--	nC
$t_{d(on)}$	Turn-on Delay Time	V_{GS}=-10V, V_{DS}=-50V, I_D=-18A, R_G=3.3R	--	17	--	ns
t_r	Turn-on Rise Time		--	6	--	ns
$t_{d(off)}$	Turn-off Delay Time		--	75	--	ns
t_f	Turn-Off Fall Time		--	10	--	ns
C_{iss}	Input Capacitance	V_{DS}=-50V, V_{GS}=0V, f=1.0MHz	--	2590	--	pF
C_{oss}	Output Capacitance		--	320	--	pF
C_{rss}	Reverse Transfer Capacitance		--	45	--	pF

Note:

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 TA=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.

D: Pulse Test：Pulse Wide≤ 300μs，Duty Cycle≤ 2%.

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

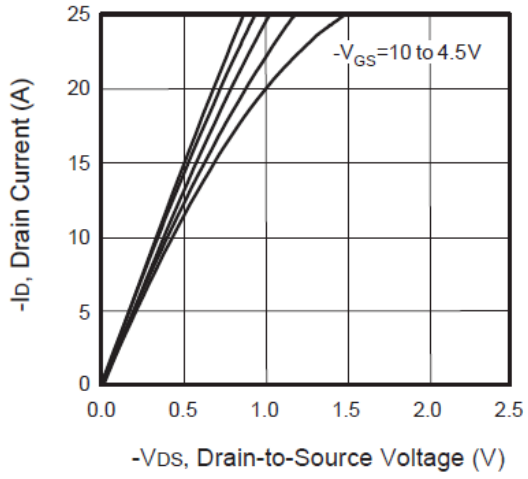


Figure 1. Output Characteristics

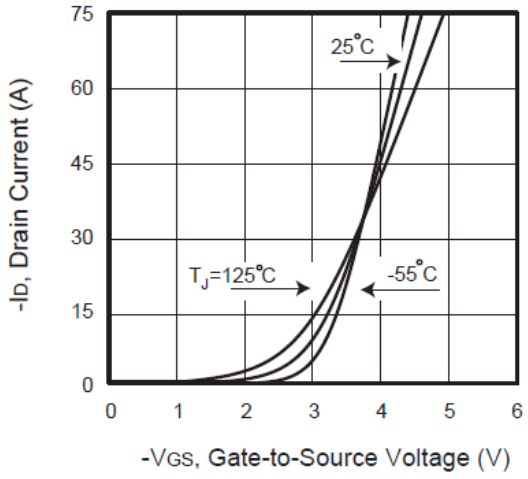


Figure 2. Transfer Characteristics

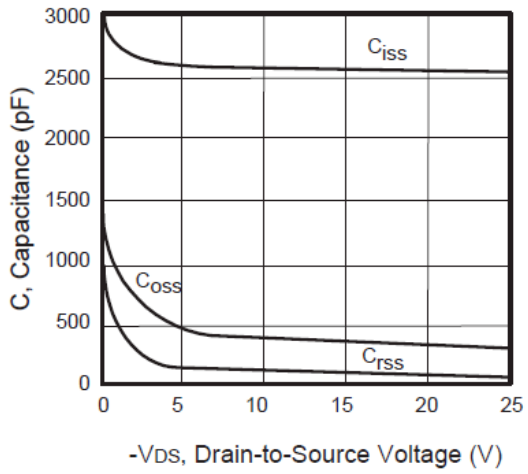


Figure 3. Capacitance

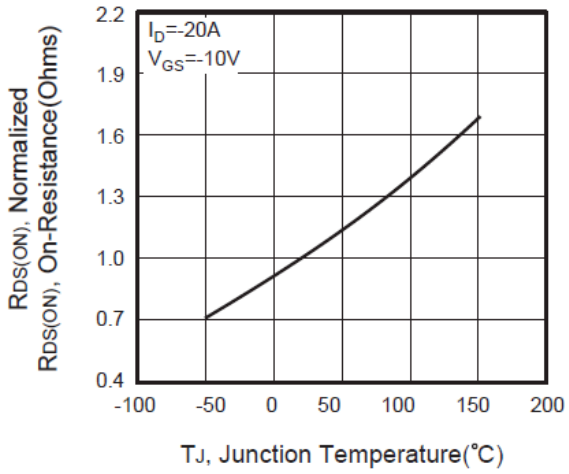


Figure 4. On-Resistance Variation with Temperature

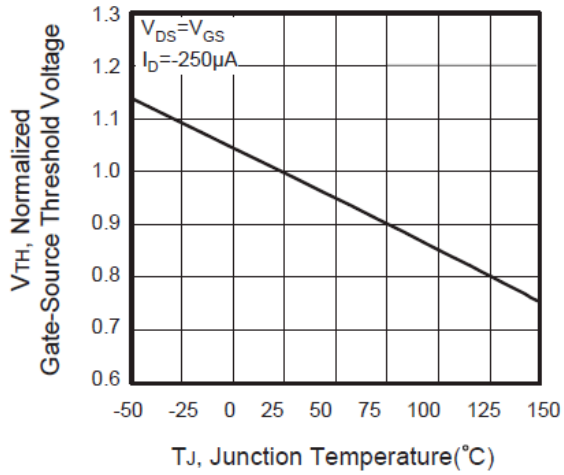


Figure 5. Gate Threshold Variation with Temperature

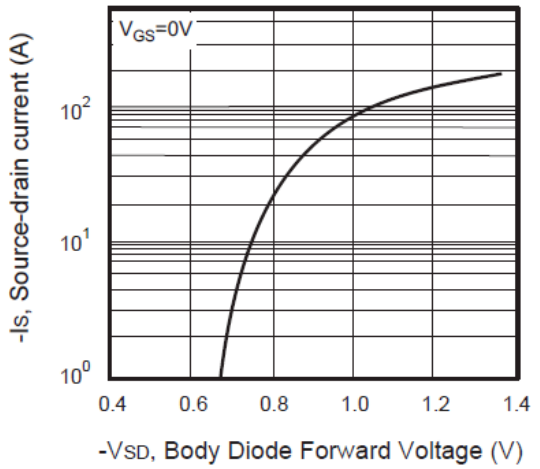


Figure 6. Body Diode Forward Voltage Variation with Source Current

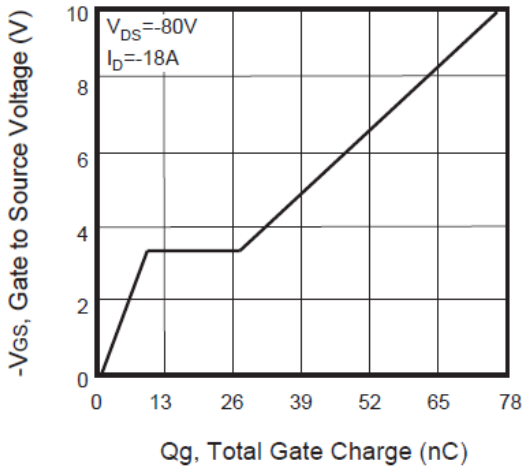


Figure 7. Gate Charge

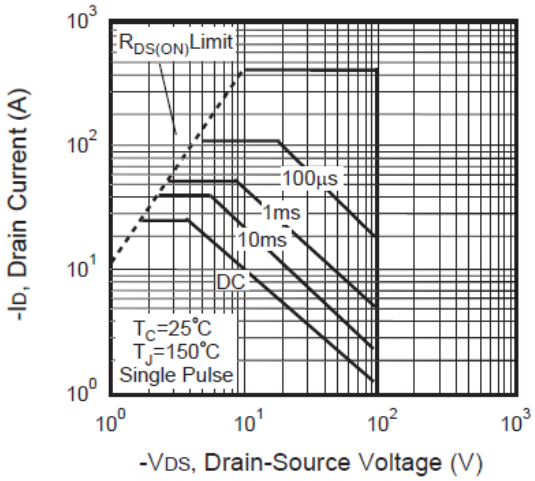


Figure 8. Maximum Safe Operating Area

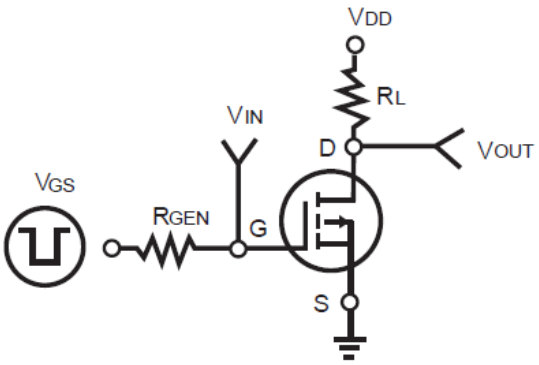


Figure 9. Switching Test Circuit

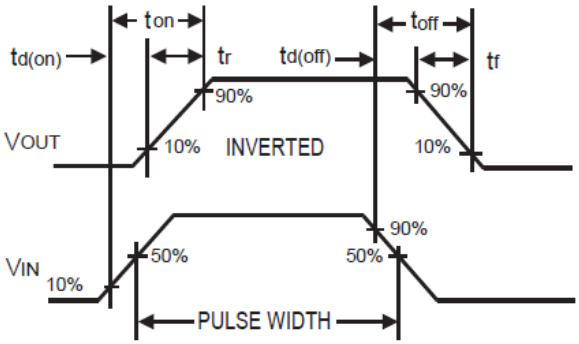


Figure 10. Switching Waveforms

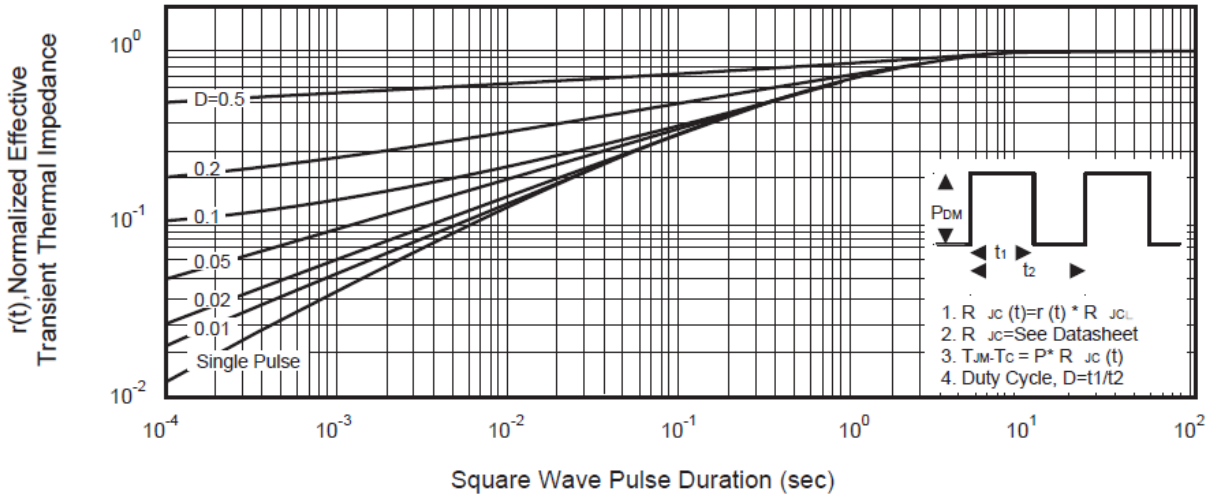


Figure 11. Normalized Thermal Transient Impedance Curve

Attention

1, Any and all Winsok power products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your Winsok power representative nearest you before using any Winsok power products described or contained herein in such applications.

2,Winsok power assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all Winsok power products described or contained herein.

3, Specifications of any and all Winsok power products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.

4, Winsok power Semiconductor CO., LTD. strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.

5,In the event that any or all Winsok power products(including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.

7, Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. Winsok power believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

8, Any and all information described or contained herein are subject to change without notice due to product/technology improvement,etc. When designing equipment, refer to the "Delivery Specification" for the Winsok power product that you Intend to use.

9, this catalog provides information as of Sep.2014. Specifications and information herein are subject to change without notice.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET ***category:***

Click to view products by Winsok ***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