



N-Channel and N-Channel Complementary MOSFET

Product Summary

V_{DS}	30V
I_D	10A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	47m
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	78m

General Description

Trench Power LV MOSFET technology
Excellent package for heat dissipation
High density cell design for low $R_{DS(ON)}$
-0 Flammability Rating

Applications

Power switching application
Uninterruptible power supply
DC-DC convertor

Absolute Maximum Ratings ($T_A=25$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	30	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25$	I_D	3.7	A
	$T_A=100$		2.3	
	$T_C=25$		10	
	$T_C=100$		6	
Pulsed Drain Current ^A		I_{DM}	30	A
Total Power Dissipation ^B	$T_A=25$	P_D	1.2	W
	$T_A=100$		0.5	
	$T_C=25$		8.9	
	$T_C=100$		3.5	
Junction and Storage Temperature Range		T_J, T_{STG}	-55 +150	

Thermal resistance

Parameter	Symbol	
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YJQT2304A

Electrical Characteristics ($T_J=25$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						

Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}				
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Typical Electrical and Thermal Characteristics Diagrams

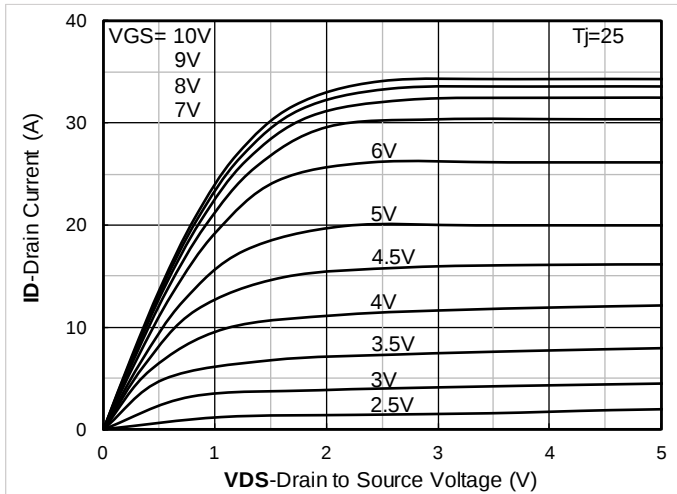


Figure 1. Output Characteristics

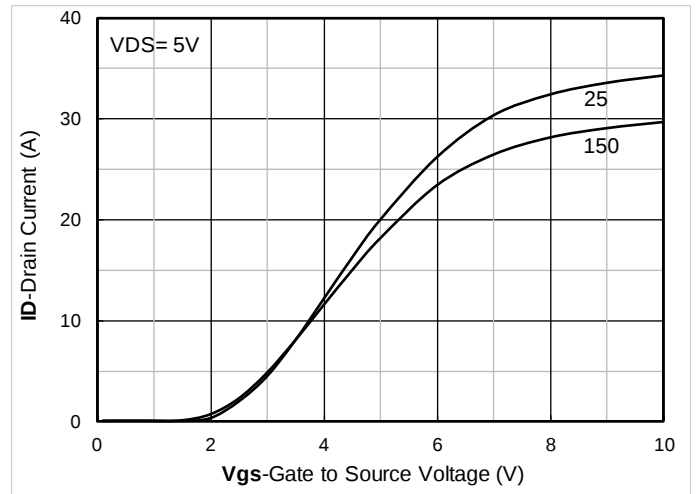


Figure 2. Transfer Characteristics

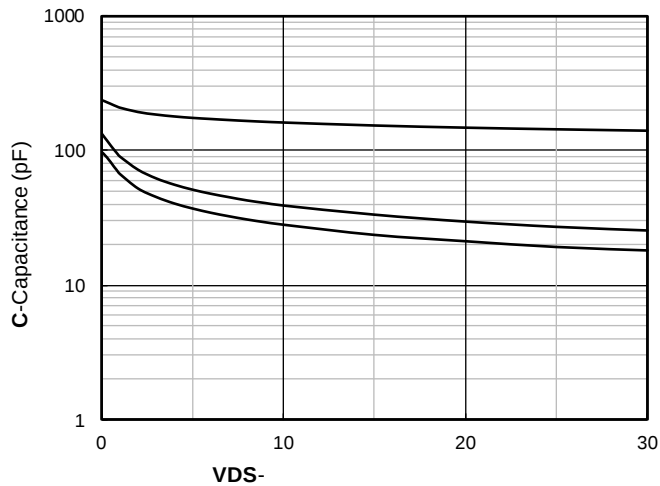


Figure 3. Capacitance Characteristics

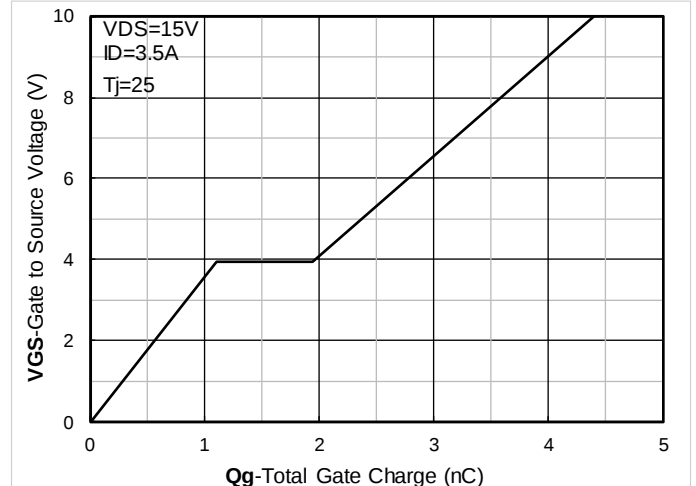


Figure 4. Gate Charge

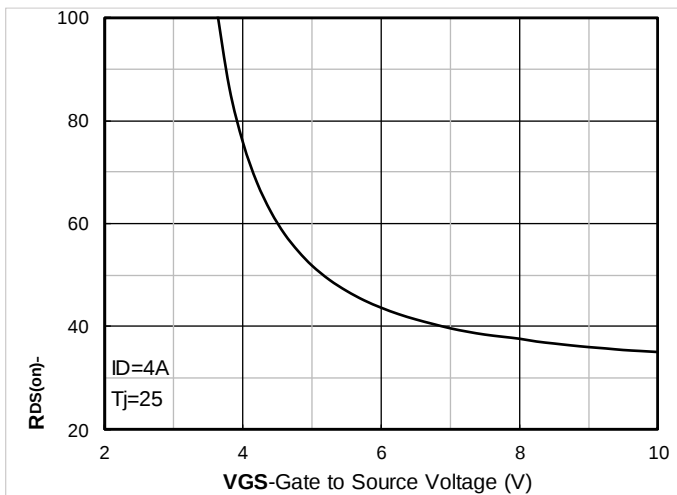


Figure 5. On-Resistance vs Gate to Source Voltage

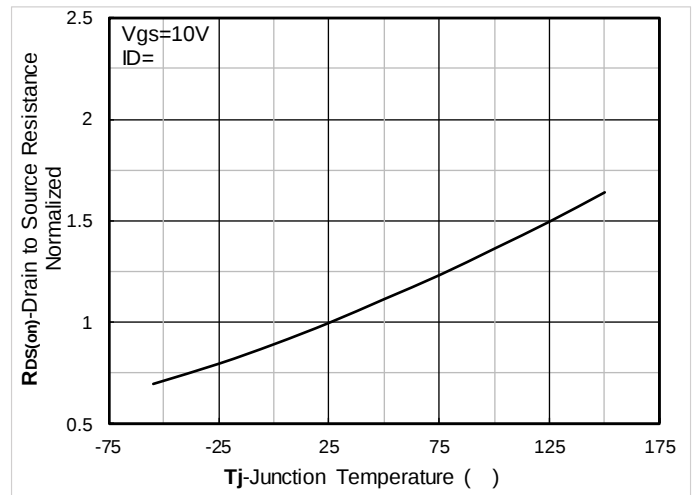


Figure 6. Normalized On-Resistance

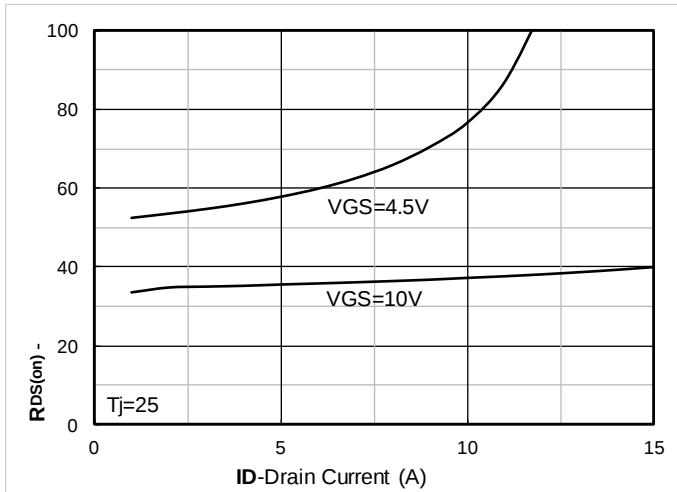


Figure 7. $R_{DS(on)}$ VS Drain Current

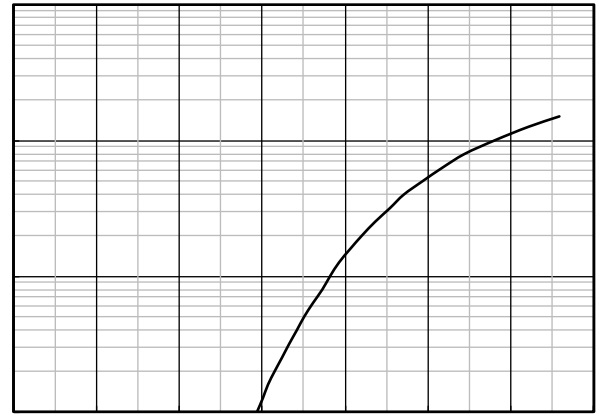


Figure 8. Forward characteristics of reverse diode

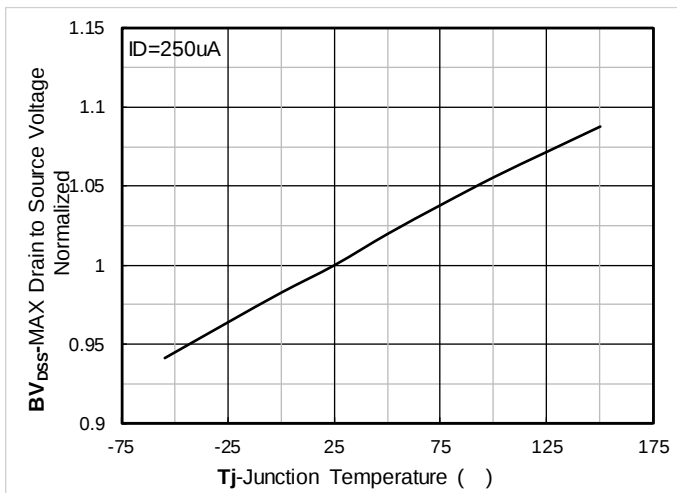


Figure 9. Normalized breakdown voltage

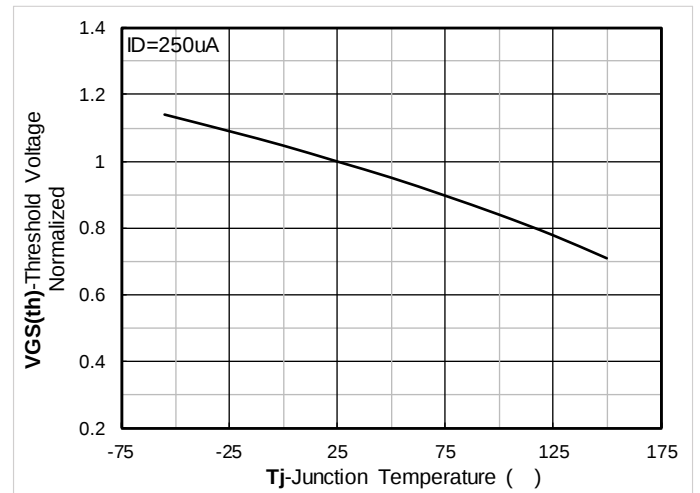


Figure 10. Normalized Threshold voltage

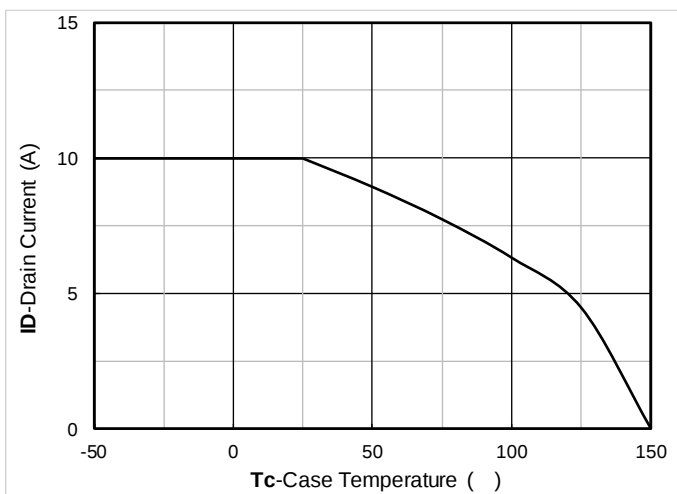


Figure 11. Current dissipation

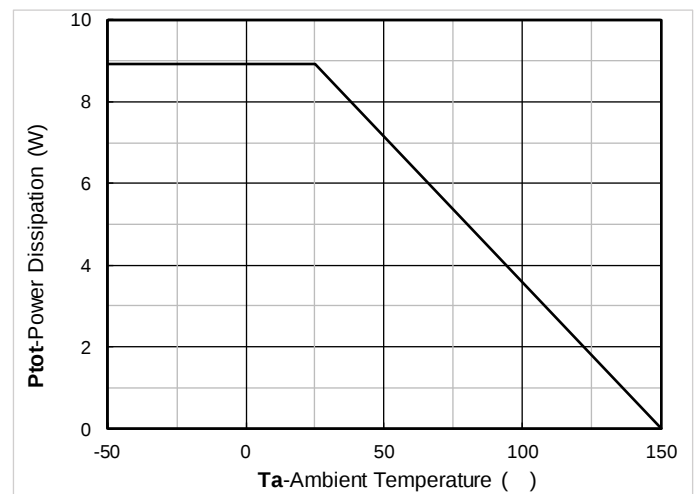


Figure 12. Power dissipation

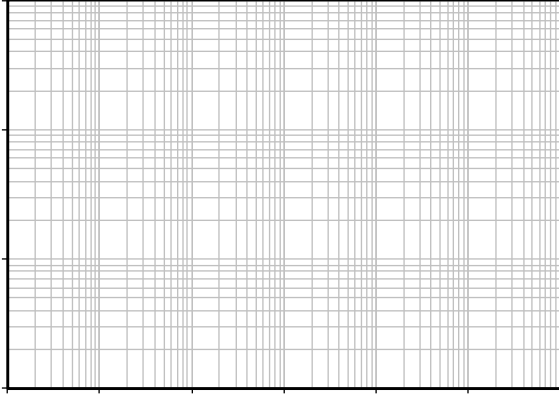


Figure 13. Maximum Transient Thermal Impedance

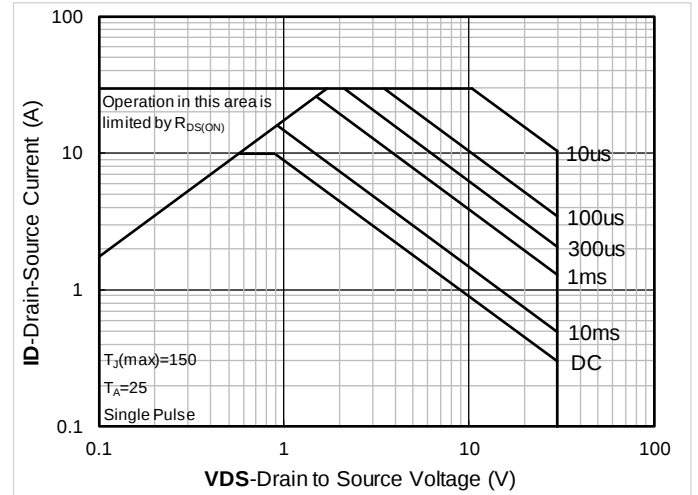


Figure 14. Safe Operation Area

Test Circuits

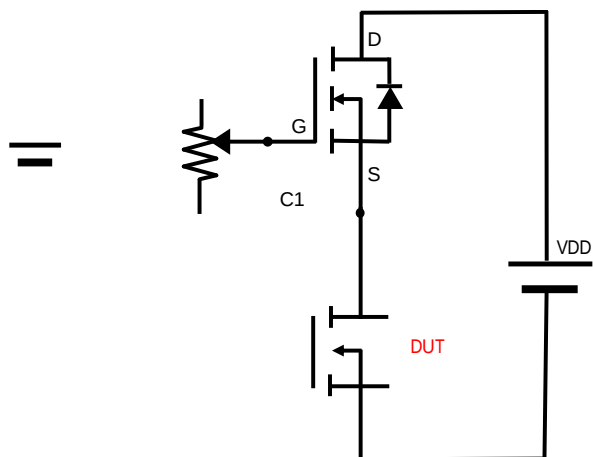


Figure B. Gate Charge Test Circuit & Waveform

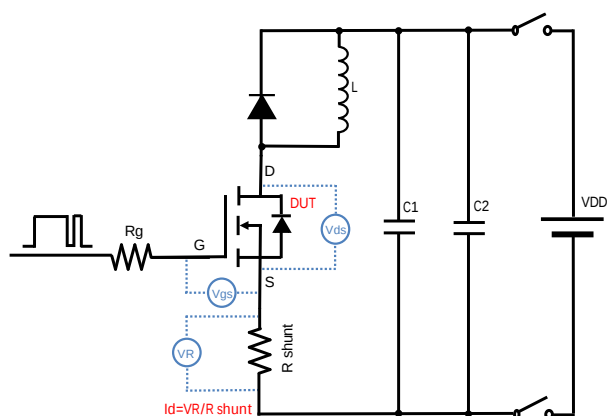


Figure C. Resistive Switching Test Circuit & Waveform

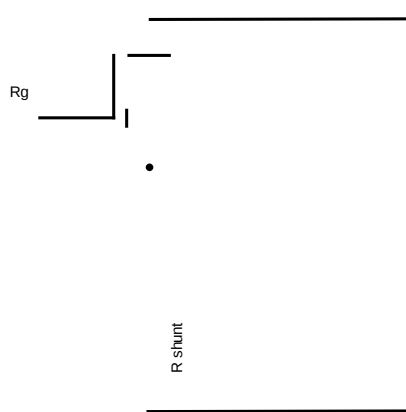


Figure D. Diode Recovery Test Circuit & Waveform



DFN2020-6L-J-0.65mm Package information

