

FEATURES

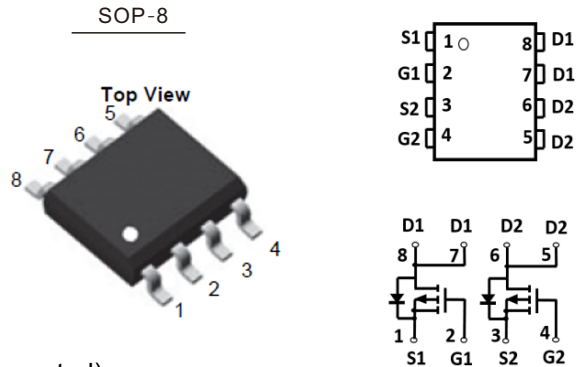
- $R_{DS(on)} < 34m\Omega @ V_{GS} = -4.5V$
- $R_{DS(on)} < 23m\Omega @ V_{GS} = -10V$
- Trench Power LV MOSFET technology



Product Summary			
V_{DS}	$R_{DS(on)}$ (m Ω) Typ	I_D (A)	Q_g (Typ)
-30V	18.5 @ -10V	-10	28.7nc
	24.5 @ -4.5V		

MECHANICAL DATA

- Case: SOP-8
- Terminals: Plated solderable per MIL-STD-750, method 2026
- Mounting Position: Any



Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

Parameters		Symbol	Value	Unit
Drain-Source voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A = 25^\circ C @ \text{Steady State}$	I_D	-10	A
	$T_A = 70^\circ C @ \text{Steady State}$		-8	
Pulsed Drain Current ¹⁾		I_{DM}	-50	A
Maximum Power Dissipation @ $T_A = 25^\circ C$		P_D	3.0	W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to +150	$^\circ C$

Thermal Resistance Ratings

Parameters	Symbol	Typ	Max	Unit
Junction to Ambient, Steady State	$R_{\theta JA}$	-	42	$^\circ C/W$

1. Pulse Test: Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$
2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameters	Symbol	Conditions	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =-250μA	-30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V, T _C =25°C	-	-	-1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V	-	-	±100	nA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250μA	-1.0	-1.5	-2.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} = -4.5V, I _D =-5.0A	-	24.5	34	mΩ
		V _{GS} = -10V, I _D =-10A	-	18.5	23	
Dynamic						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1MHz	-	1500	-	pF
Output Capacitance	C _{oss}		-	178	-	
Reverse Transfer Capacitance	C _{rss}		-	146	-	
Total Gate Charge	Q _g	V _{DS} =-15V, V _{GS} =-10V, I _D =-6.0A	-	28.7	-	nC
Gate-Source Charge	Q _{gs}		-	5.5	-	
Gate-Drain Charge	Q _{gd}		-	5.4	-	
Turn-on Delay Time	t _{D(on)}	V _{GS} =-10V, V _{DS} =-15V, I _D =-6.0A, R _{GEN} =2.5Ω	-	10	-	ns
Turn-On Rise Time	t _r		-	44	-	
Turn-off Delay Time	t _{D(off)}		-	54	-	
Turn-Off Fall Time	t _f		-	59	-	
Drain-Source Body-Diode Characteristics						
Maximum Body-Diode Continuous Current	I _S		-	-	-10	A
Diode Forward Voltage	V _{SD}	I _S =-10A, V _{GS} =0V	-	-0.8	-1.2	V

Notes : 1.Pulse Test: Pulse width ≤300μS, Duty cycle≤2%
 2.Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Typical Characteristics Diagrams

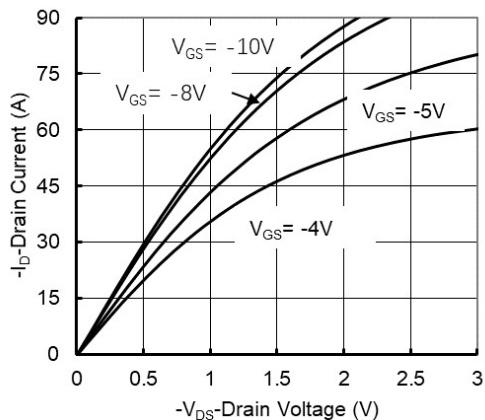


Figure 1. Output Characteristics

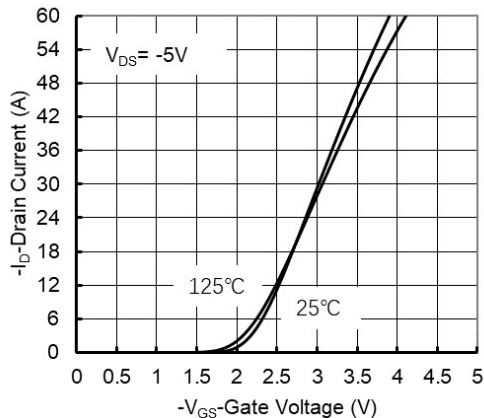


Figure 2. Transfer Characteristics

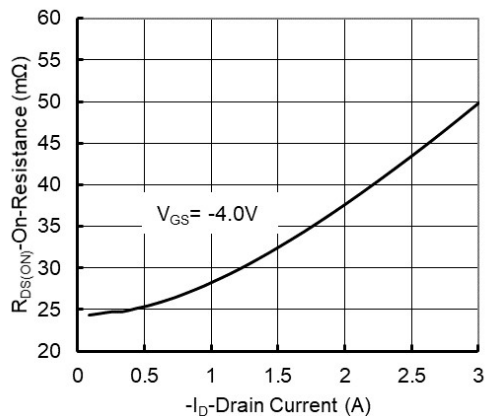


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

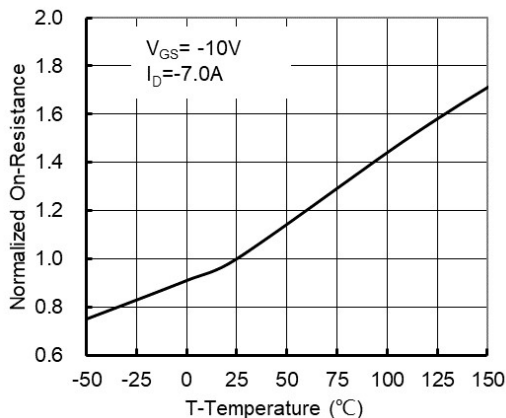


Figure 4. On-Resistance vs. Junction Temperature

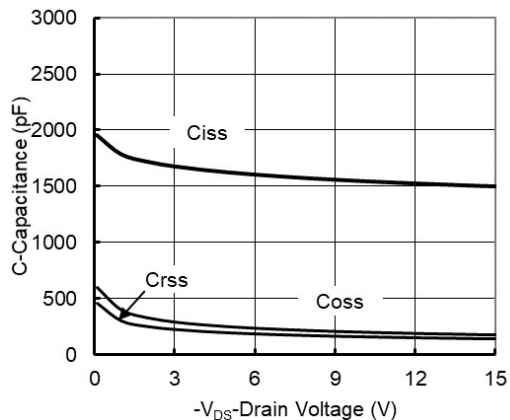


Figure 5. Capacitance Characteristics

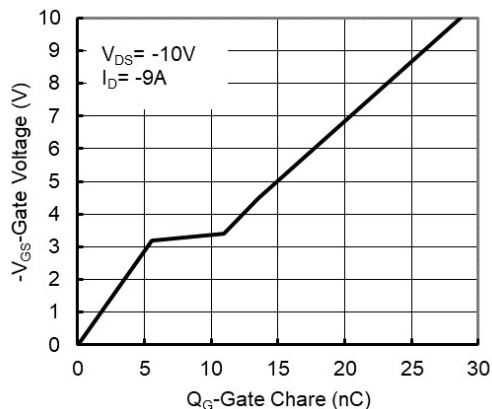


Figure 6. Gate Charge

Typical Characteristics Diagrams

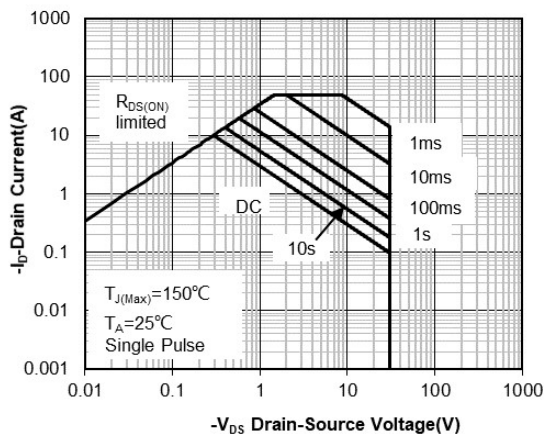


Figure 7. Safe Operation Area

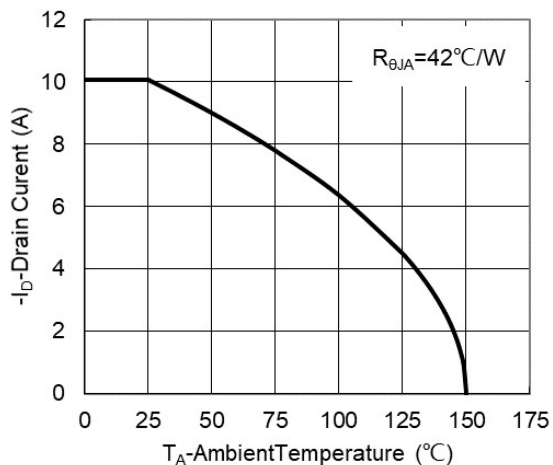


Figure 8. Maximum Continuous Drain Current vs Ambient Temperature

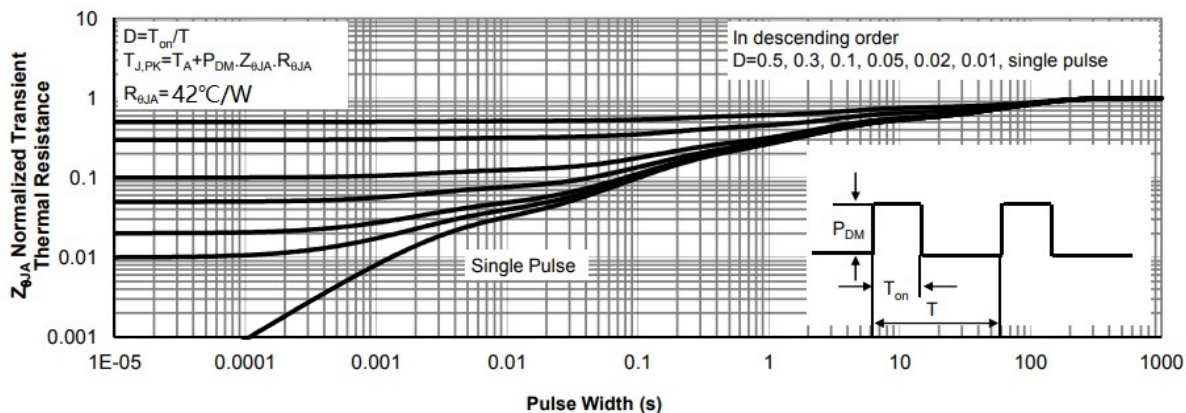
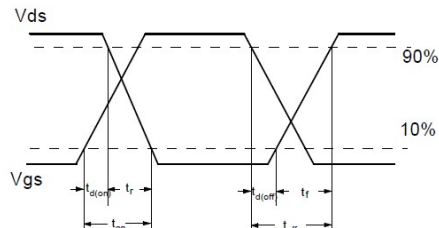
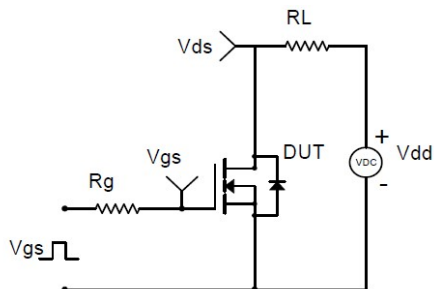
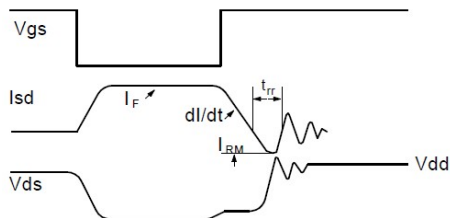
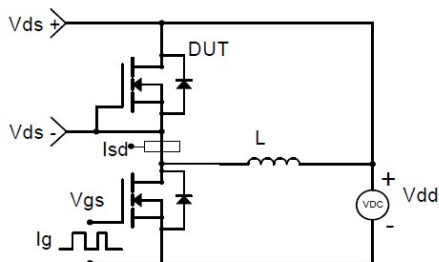


Figure 9. Normalized Maximum Transient Thermal Impedance

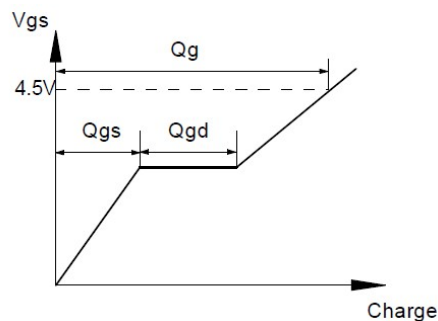
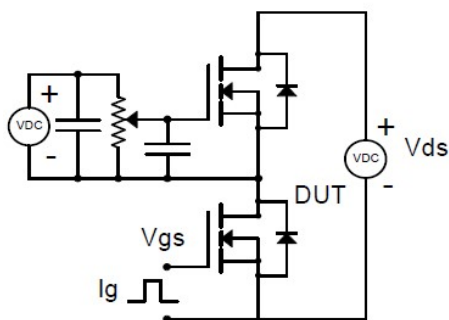
Typical Test Circuit



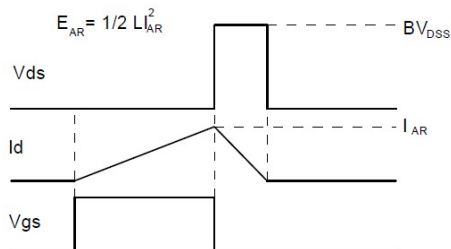
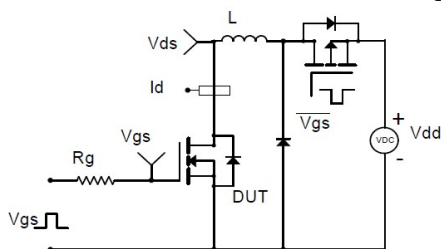
Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



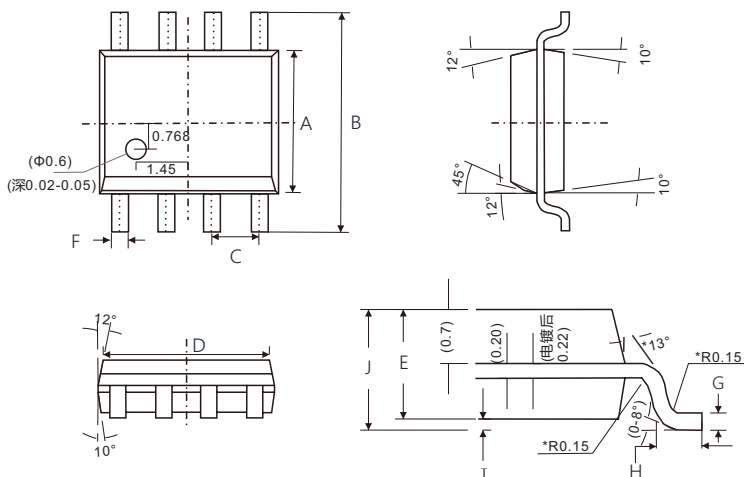
Gate Charge Test Circuit & Waveform



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms

PACKAGE OUTLINE DIMENSIONS

SOP-8



SOP-8		
Dim	Min	Max
A	3.80	4.04
B	5.80	6.20
C	1.27BSC	
D	4.80	5.00
E	1.35	1.55
F	0.30	0.51
G	0.17	0.28
H	0.40	1.27
I	0.06	0.25
J	1.35	1.75

Dimensions in millimeters

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