

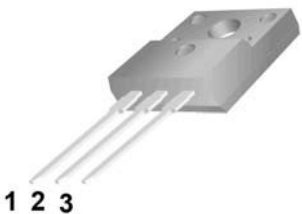
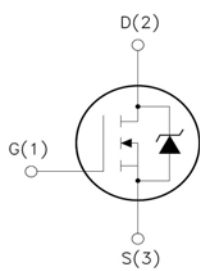


<div style="text-align: center;">  <p>ADL 奥德利® AUDLEY</p> <p>FQF8N80</p> <p>Features:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Low Intrinsic Capacitances. <input type="checkbox"/> Excellent Switching Characteristics. <input type="checkbox"/> Extended Safe Operating Area. <input type="checkbox"/> Unrivalled Gate Charge :Qg=40nC (Typ.). <input type="checkbox"/> BVDSS=800V, I_p=8A <input type="checkbox"/> R_{Ds(on)} : 1.6Ω (Max) @V_G=10V <input type="checkbox"/> 100% Avalanche Tested </div>	<div style="text-align: right;">  </div> <p style="text-align: center; font-weight: bold;">TO-220F</p> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: right; margin-top: 10px;"> <p>1.Gate (G)</p> <p>2.Drain (D)</p> <p>3.Source (S)</p> </div>
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Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{DSS}	Drain-Source Voltage	800	V
I _D	Drain Current	T _j =25°C	8.0
		T _j =100°C	4.7
V _{GS(TH)}	Gate Threshold Voltage	±30	V
E _{AS}	Single Pulse Avalanche Energy (note1)	320	mJ
I _{AR}	Avalanche Current (note2)	8.0	A
P _D	Power Dissipation (T _j =25°C)	50	W
T _j	Junction Temperature(Max)	150	°C
T _{stg}	Storage Temperature	-55~+150	°C
TL	Maximum lead temperature for soldering purpose, 1/8" from case for 5 seconds	300	°C

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit
R _{θJC}	Thermal Resistance, Junction to Case	-	2.12	°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	-	62.5	°C/W

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$I_D=250\mu A, V_{GS}=0$	800	-	-	V
$\Delta BV_{DSS}/\Delta T_J$	Breakdown Voltage Temperature Coefficient	$I_D=250\mu A$, Reference to 25°C	-	0.67	-	V/°C
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=800V, V_{GS}=0V$	-	-	10	μA
		$V_{DS}=640V, T_J=125^\circ C$			100	
I_{GSSF}	Gate-body leakage Current, Forward	$V_{GS}=+30V, V_{DS}=0V$	-	-	100	nA
I_{GSSR}	Gate-body leakage Current, Reverse	$V_{GS}=-30V, V_{DS}=0V$	-	-	-100	
On Characteristics						
$V_{GS(TH)}$	Gate Threshold Voltage	$I_D=250\mu A, V_{DS}=V_{GS}$	3	-	5	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$I_D=4A, V_{GS}=10V$	-	-	1.6	Ω
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0, f=1.0MHz$	-	1752	-	μF
C_{oss}	Output Capacitance		-	150	-	
C_{rss}	Reverse Transfer Capacitance		-	19	-	
Switching Characteristics						
$T_d(on)$	Turn-On Delay Time	$V_{DD}=400V, I_D=8A, R_G=25\Omega$ (Note 3,4)	-	35	80	ns
T_r	Turn-On Rise Time		-	80	170	
$T_d(off)$	Turn-Off Delay Time		-	95	200	
T_f	Turn-Off Rise Time		-	60	120	
Q_g	Total Gate Charge	$V_{DS}=640V, V_{GS}=10V, I_D=8A$ (Note 3,4)	-	40	52	nC
Q_{gs}	Gate-Source Charge		-	8.5	-	
Q_{gd}	Gate-Drain Charge		-	20	-	
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Max. Diode Forward Current	-	-	-	8	A
I_{SM}	Max. Pulsed Forward Current	-	-	-	32	
V_{SD}	Diode Forward Voltage	$I_D=8A$	-	-	1.4	V
T_{rr}	Reverse Recovery Time	$I_S=8A, V_{GS}=0V, diF/dt=100A/\mu s$ (Note3)	-	320	-	nS
Q_{rr}	Reverse Recovery Charge		-	4.3	-	μC

- Notes : 1, L=25.0mH, IAS=8A, VDD=50V, RG=25 Ω , Starting T_J =25°C
 2, Repetitive Rating : Pulse width limited by maximum junction temperature
 3, Pulse Test : Pulse Width \leq 300 μs , Duty Cycle \leq 2%
 4, Essentially Independent of Operating Temperature

Typical Characteristics

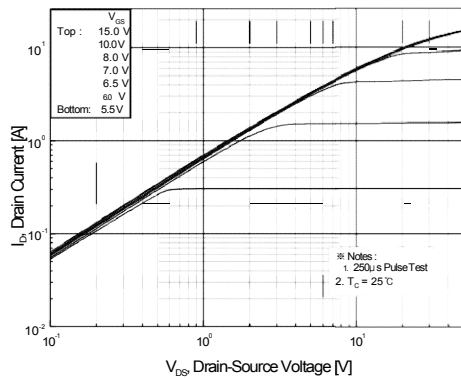


Figure 1. On-Region Characteristics

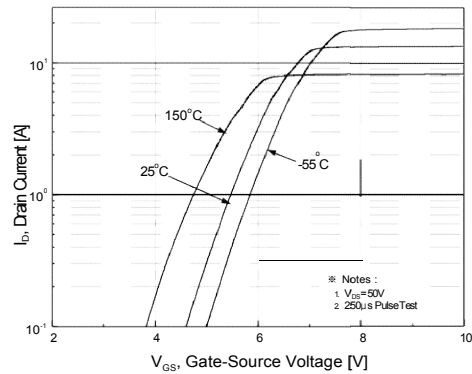


Figure 2. Transfer Characteristics

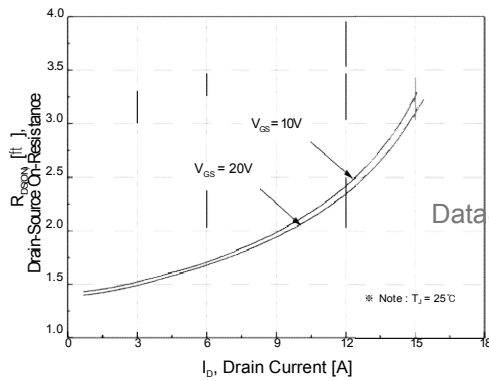


Figure 3. On-Resistance Variation vs Drain Current and Gate Voltage

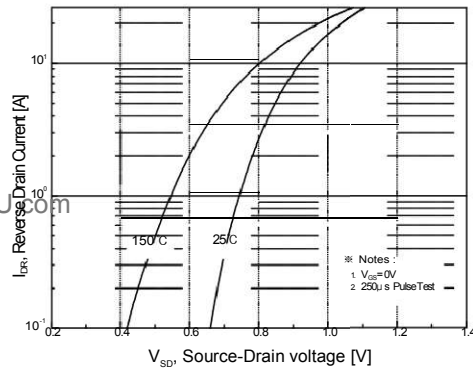


Figure 4. Body Diode Forward Voltage Variation with Source Current and Temperature

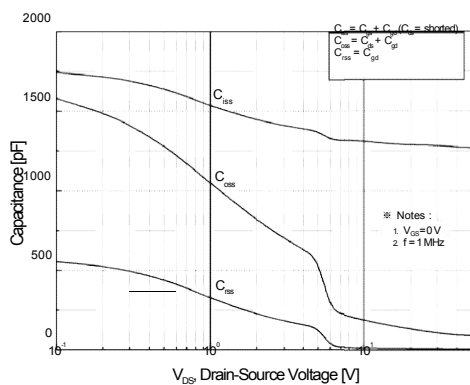


Figure 5. Capacitance Characteristics

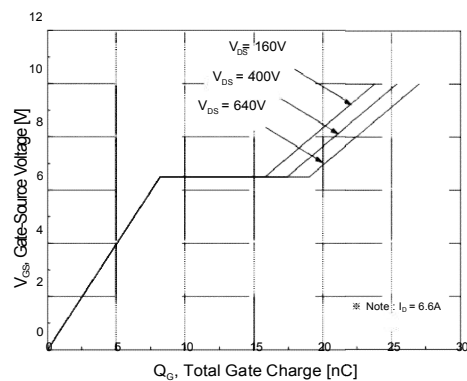


Figure 6. Gate Charge Characteristics

Typical Characteristics (Continued)

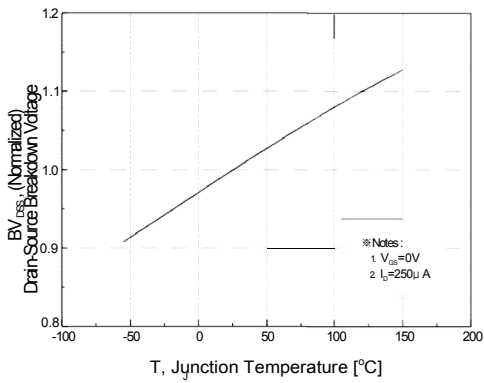


Figure 7. Breakdown Voltage Variation vs Temperature

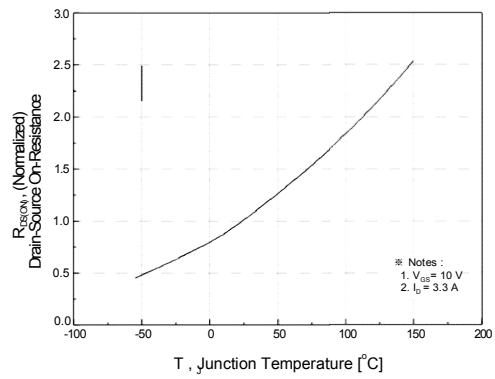


Figure 8. On-Resistance Variation vs Temperature

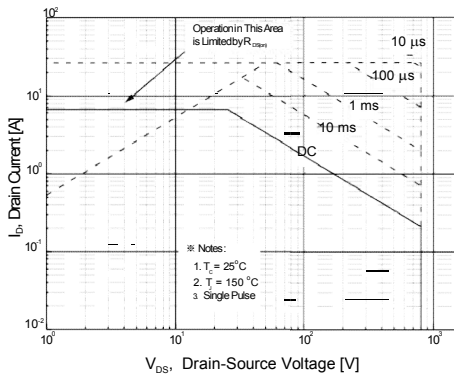


Figure 9-1. Maximum Safe Operating Area

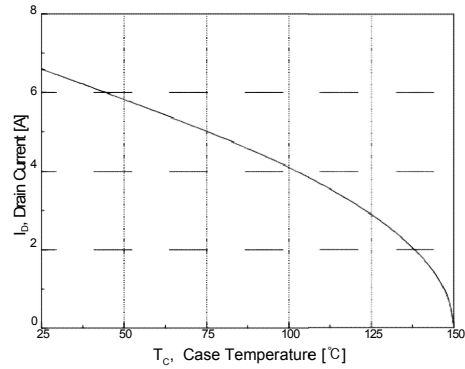


Figure 10. Maximum Drain Current vs Case Temperature

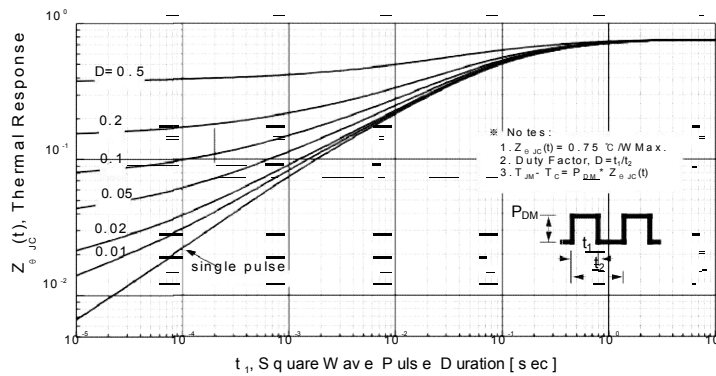
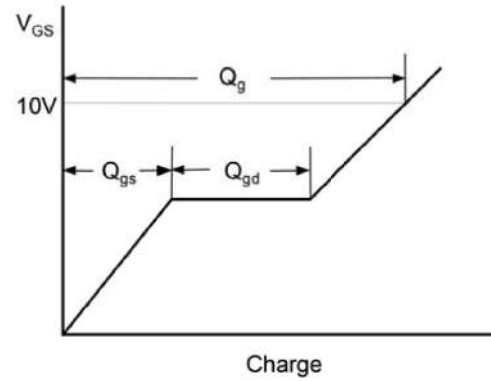
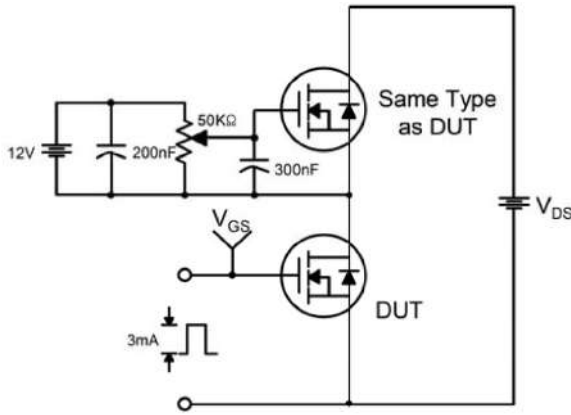
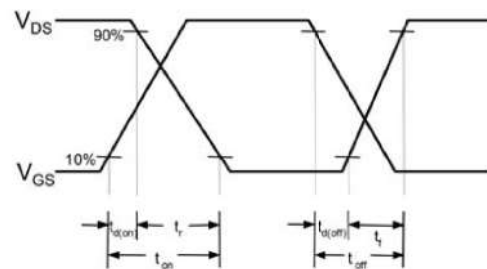
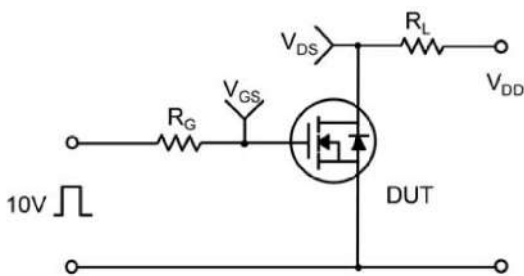


Figure 11-1. Transient Thermal Response Curve

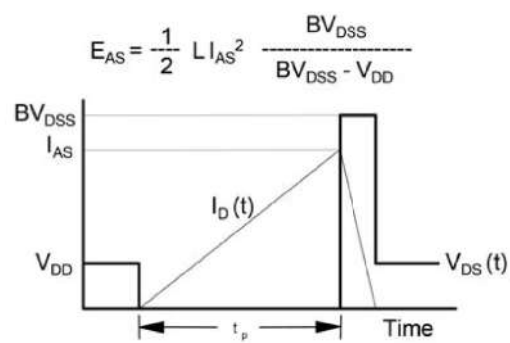
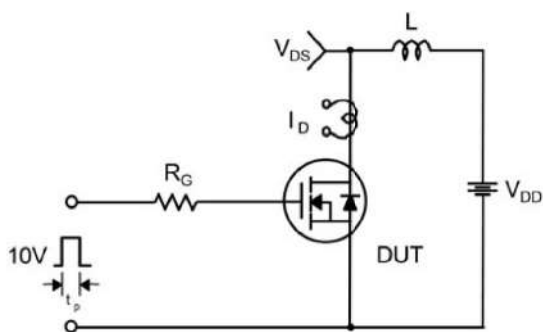
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



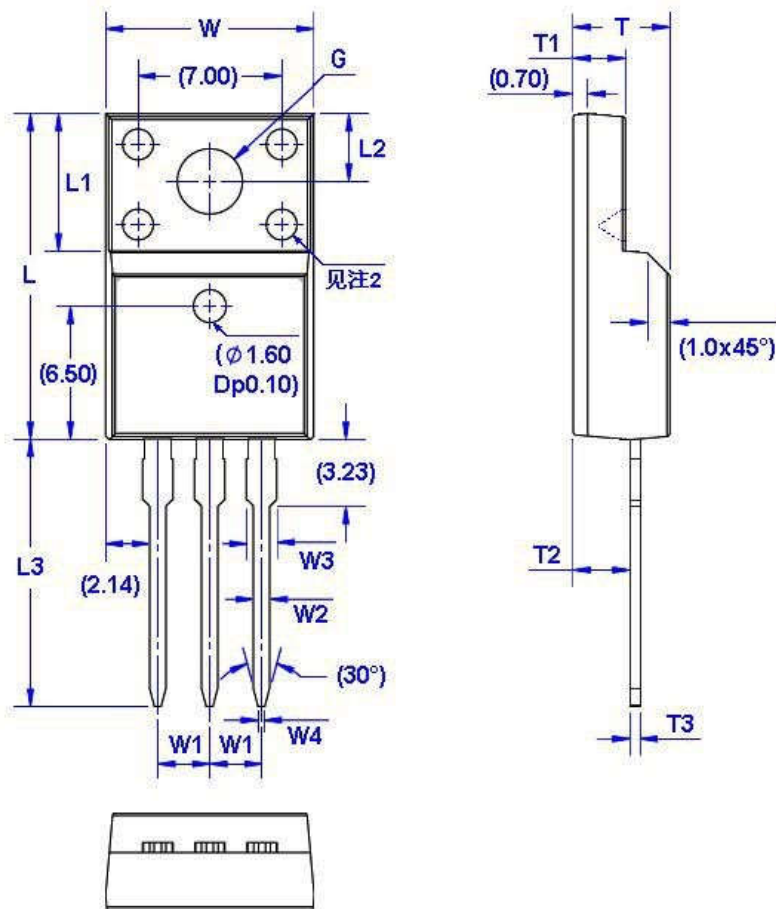
Unclamped Inductive Switching Test Circuit & Waveforms



Package Dimension

TO-220F

Unit: mm



Symbol	Size		Symbol	Size		Symbol	Size		Symbol	Size	
	Min	Max		Min	Max		Min	Max		Min	Max
W	9.96	10.36	W4	0.25	0.45	L3	12.78	13.18	T3	0.45	0.60
W1	2.54 (TYP)		L	15.67	16.07	T	4.50	4.90	G(ϕ)	3.08	3.28
W2	0.70	0.90	L1	6.48	6.88	T1	2.34	2.74			
W3	1.24	1.47	L2	3.20	3.40	T2	2.56	2.96			