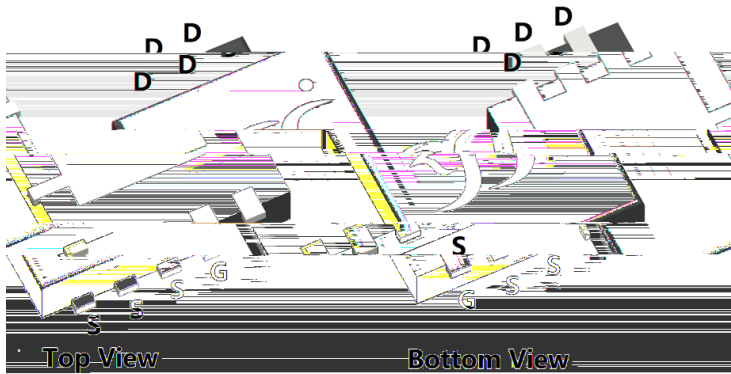
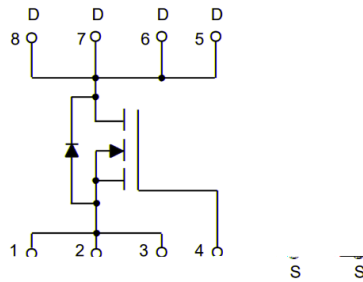




N-Channel Enhancement Mode Field Effect Transistor



PDFN3333-8L



Product Summary

V_{DS}	25V
I_D	60A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	4.6m
$R_{DS(ON)}$ (at $V_{GS}=4.5V$)	10m
100% EAS Tested	
100% V_{DS} Tested	

General Description

Trench Power LV MOSFET technology
 Excellent package for heat dissipation
 High density cell design for low $R_{DS(ON)}$
 Moisture Sensitivity Level 1
 Epoxy Meets UL 94 V-0 Flammability Rating
 Halogen Free

Applications

Power switching application
 Uninterruptible power supply
 DC-DC converter

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	25	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25^\circ C$	I_D	14	A
	$T_A=100^\circ C$		8.5	
	$T_C=25^\circ C$		60	
	$T_C=100^\circ C$		38	
Pulsed Drain Current ^A		I_{DM}	200	A
Avalanche energy ^B		EAS	78	mJ
Total Power Dissipation ^C	$T_A=25^\circ C$	P_D	1.92	W
	$T_A=100^\circ C$		0.77	
	$T_C=25^\circ C$		50	
	$T_C=100^\circ C$		20	
Junction and Storage Temperature Range		T_J, T_{STG}	-55 +150	$^\circ C$

Thermal resistance

Parameter		Symbol	Typ	Max	Units
Thermal Resistance Junction-to-Ambient ^D	Steady-State	R_{JA}	55	65	$^\circ C/W$
Thermal Resistance Junction-to-Case	Steady-State	R_{JC}	2	2.5	

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJQ60N025A	F1	Q60N025A	5000	10000	100000	13" reel



YJQ60N025A

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	25	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=25V, V_{GS}=0V$	-	-	1	μA
		$V_{DS}=25V, V_{GS}=0V, T_J=150^\circ C$	-	-	100	
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.5	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=30A$	-	3.5	4.6	m
		$V_{GS}=10V, I_D=16A$	-	3.5	4.6	
		$V_{GS}=4.5V, I_D=10A$	-	7.4	10	
Diode Forward Voltage	V_{SD}	$I_S=30A, V_{GS}=0V$	-	-	1.2	V
Gate resistance	R_G	$f=1MHz$	-	2	-	

Maximum Body-Diode 4351f*475.9 481.15 0.



YJQ60N025A

Typical Electrical and Thermal Characteristics Diagrams

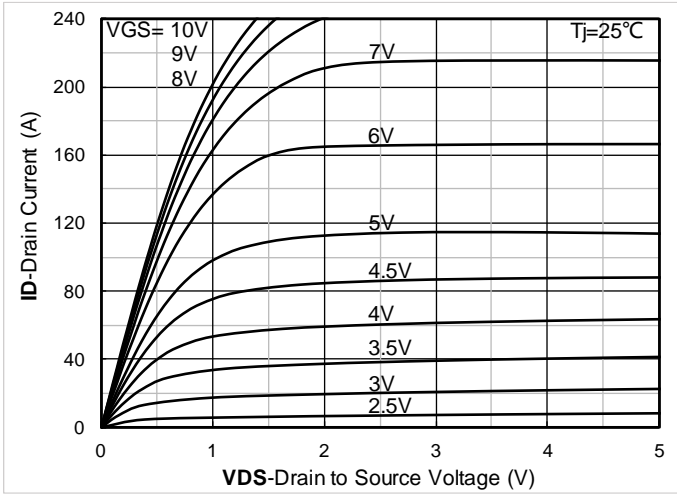


Figure 1. Output Characteristics

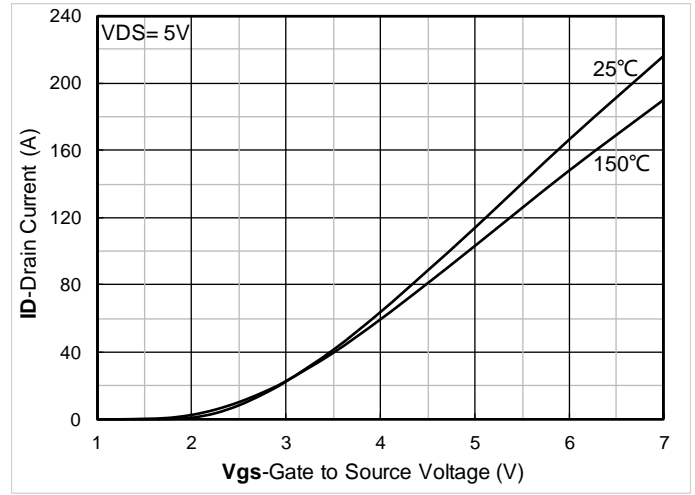


Figure 2. Transfer Characteristics



Figure 3. Capacitance Characteristics

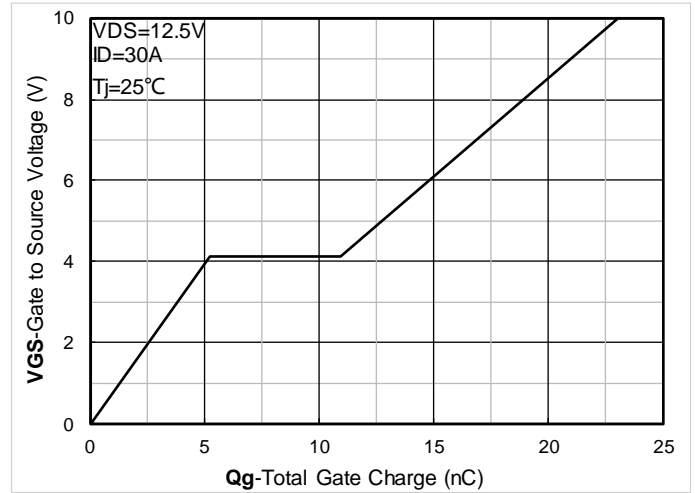


Figure 4. Gate Charge

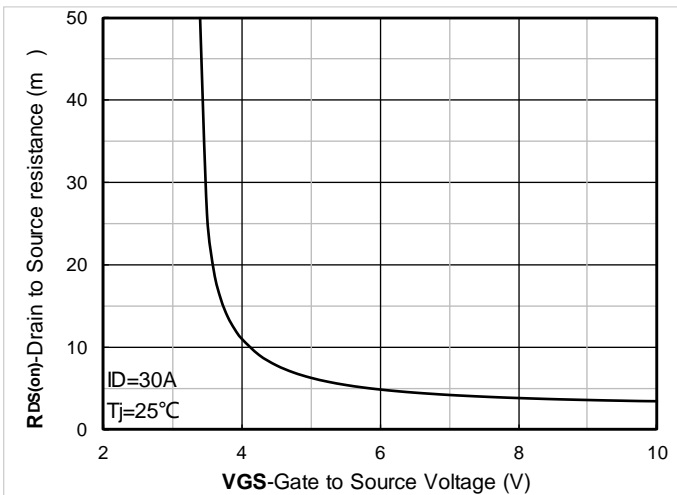


Figure 5. On-Resistance vs Gate to Source Voltage

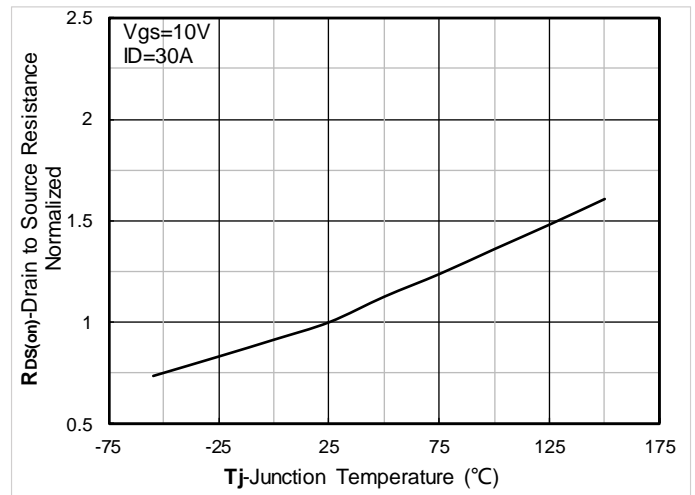


Figure 6. Normalized On-Resistance



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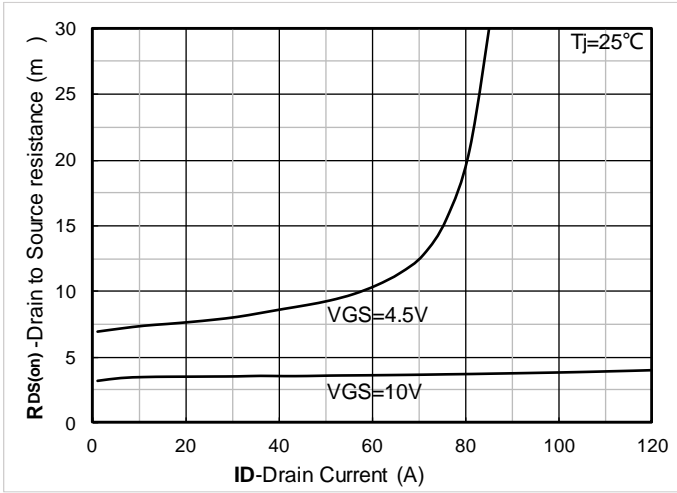


Figure 7. $R_{DS(on)}$ VS Drain Current

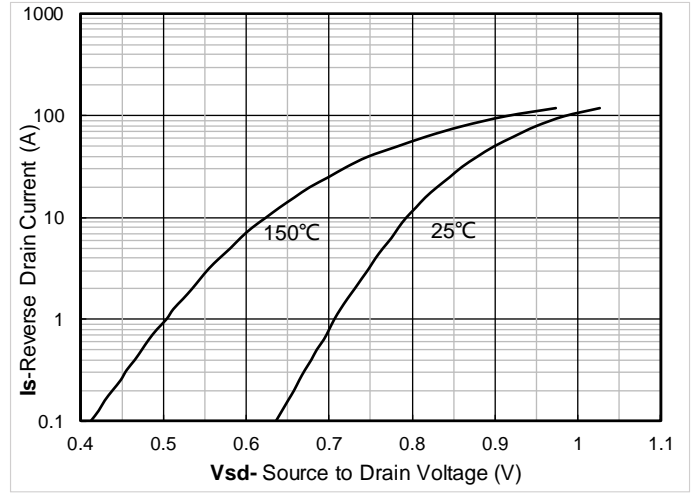


Figure 8. Forward characteristics of reverse diode

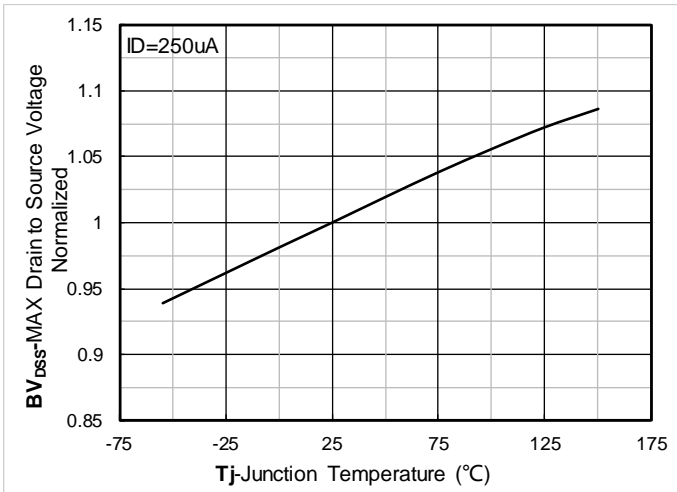


Figure 9. Normalized breakdown voltage

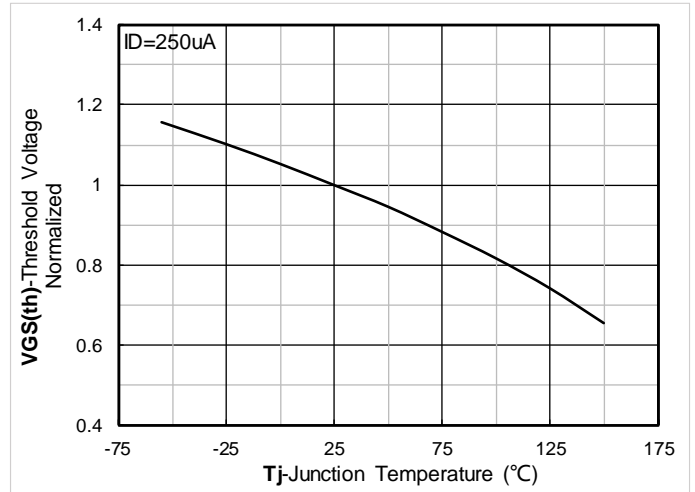


Figure 10. Normalized Threshold voltage

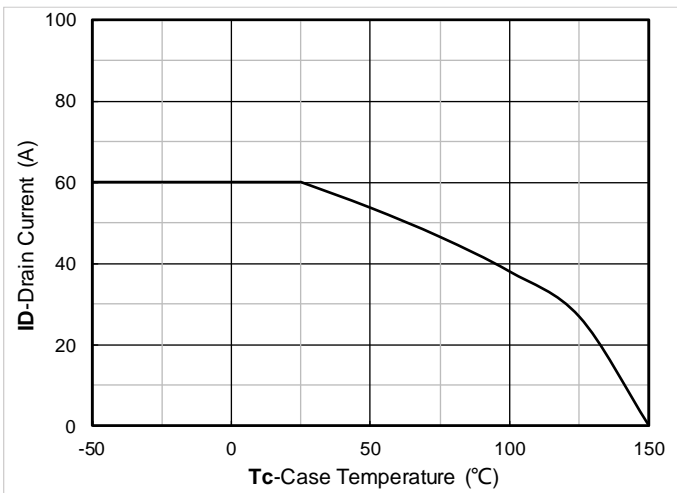


Figure 11. Current dissipation

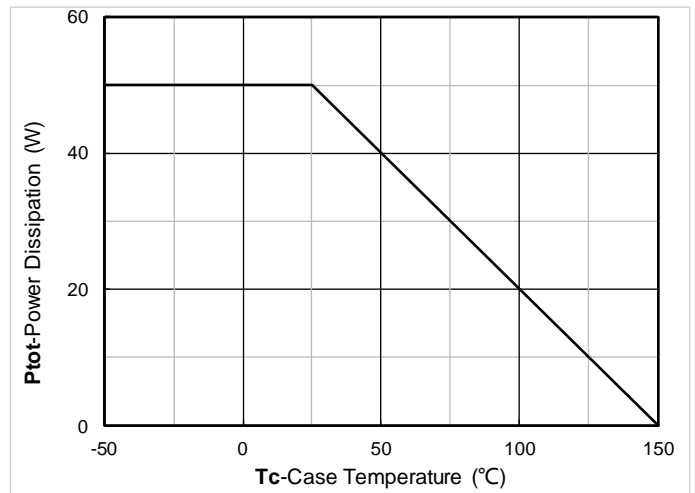


Figure 12. Power dissipation

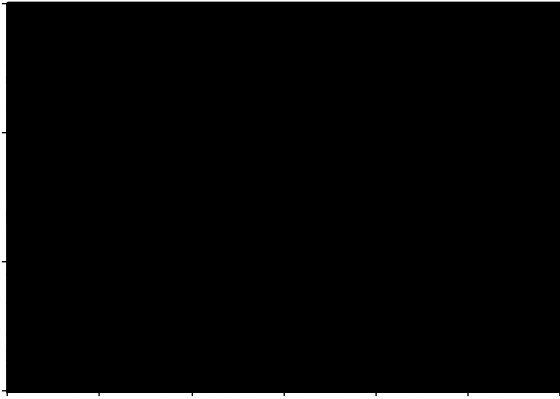


Figure 13. Maximum Transient Thermal Impedance

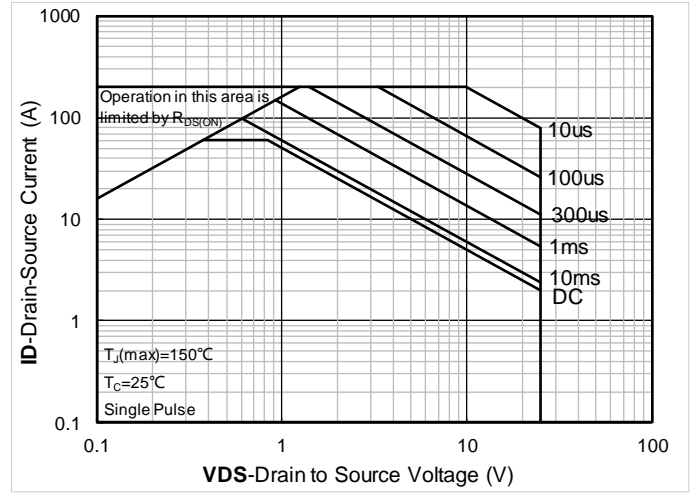


Figure 14. Safe Operation Area

Test Circuits & Waveforms

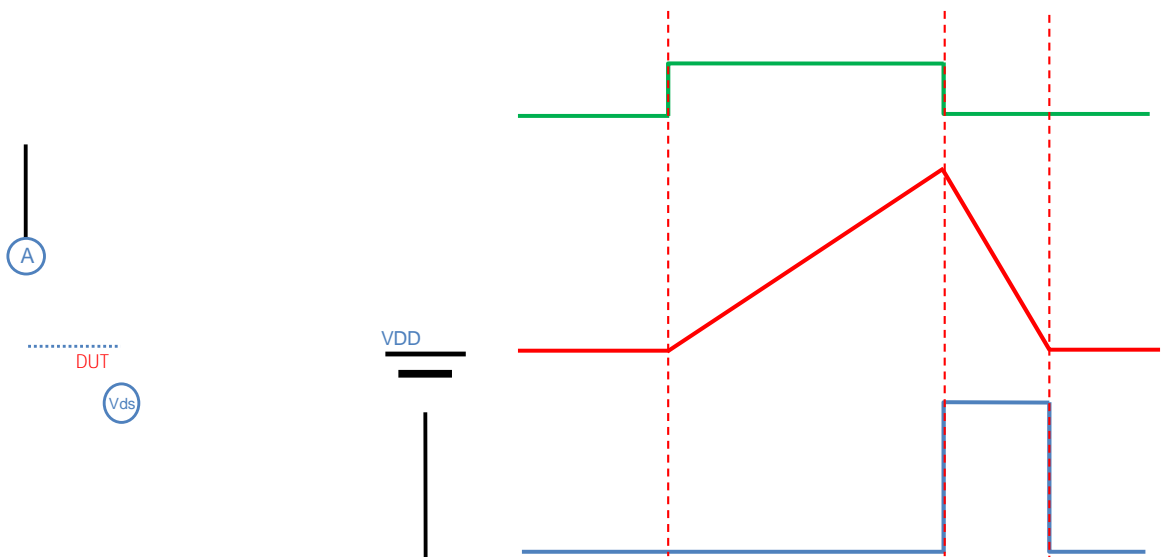


Figure A. Unclamped Inductive Switching (UIS) Test Circuit & Waveform



YJQ60N025A

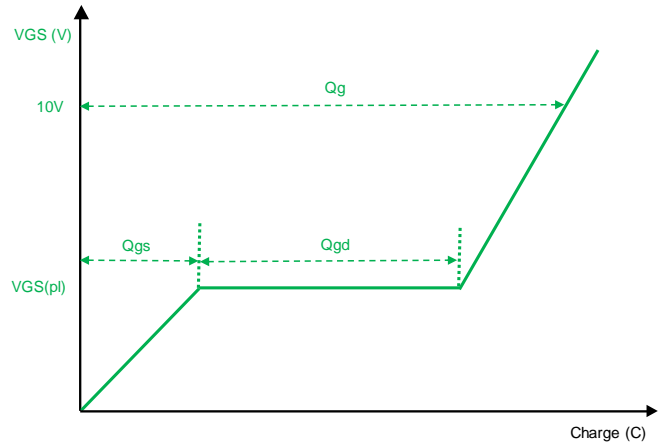
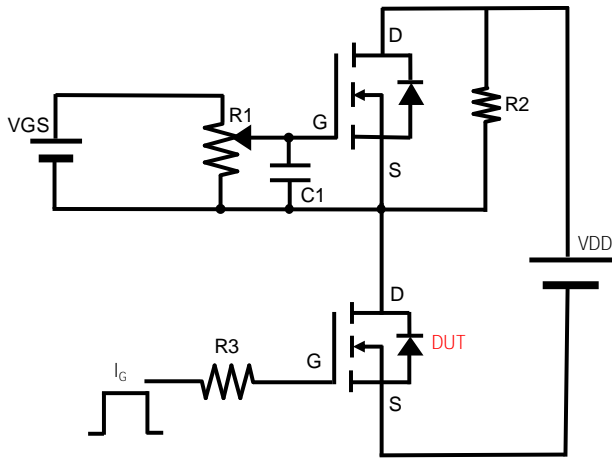


Figure B. Gate Charge Test Circuit & Waveform

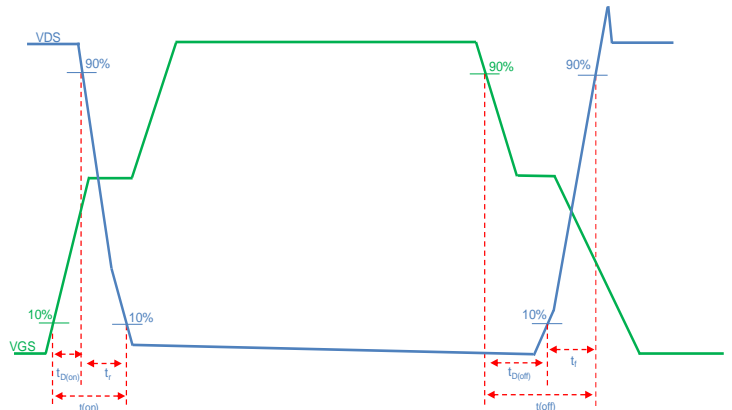
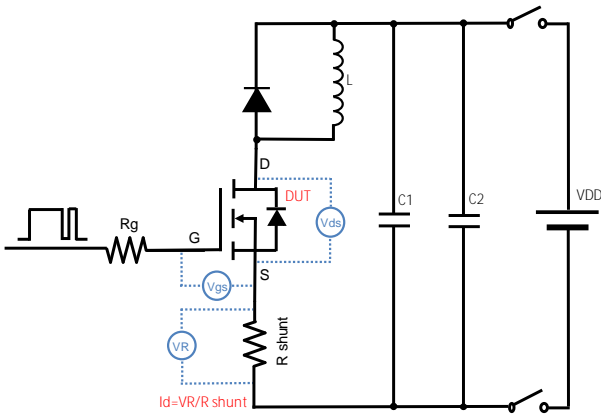


Figure C. Resistive Switching Test Circuit & Waveform

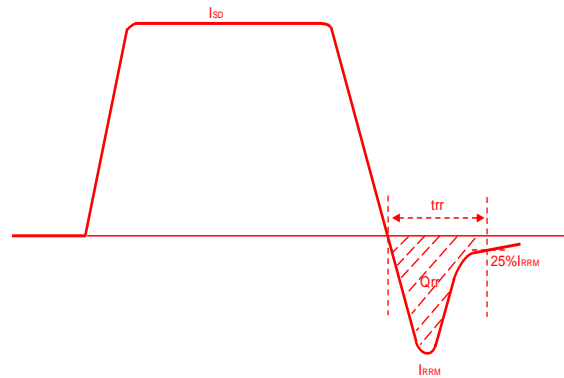
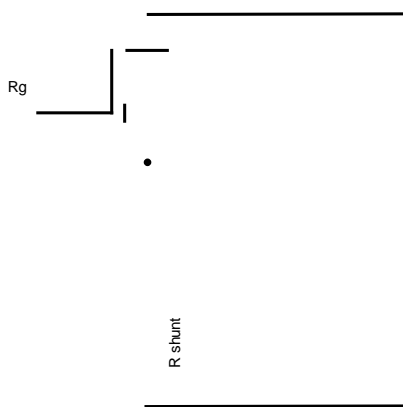
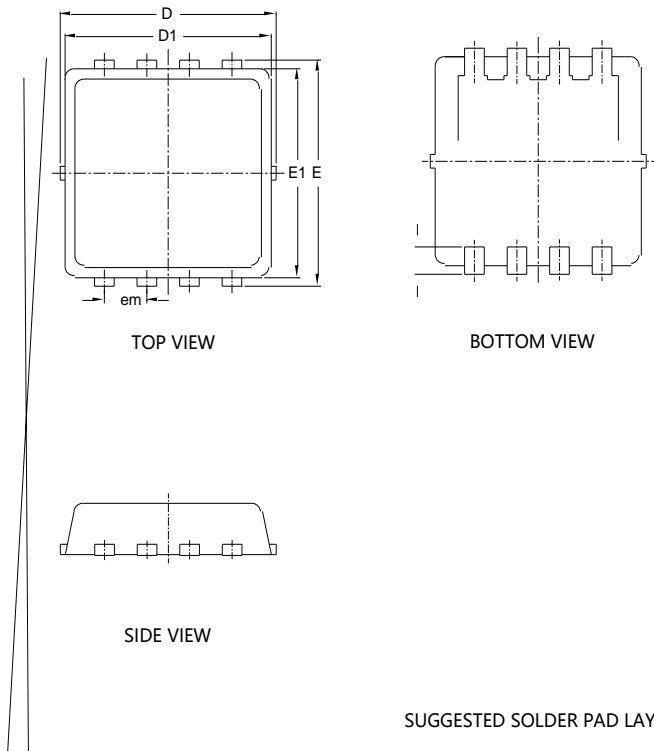


Figure D. Diode Recovery Test Circuit & Waveform



YJQ60N025A

PDFN3333-8L-B Package information



NOTE:

- 1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
- 2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
- 3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

UNIT mm

SUGGESTED SOLDER PAD LAYOUT



YJQ60N025A

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