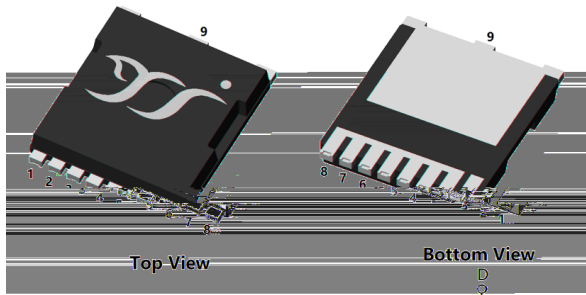
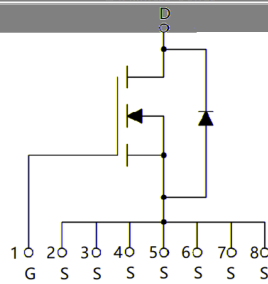




N-Channel Enhancement Mode Field Effect Transistor



TOLL



Product Summary

V_{DS}	100 V
I_D	300 A
$R_{DS(ON)}$ (at $V_{GS}=10V$)	1.45m
$R_{DS(ON)}$ (at $V_{GS}=6V$)	1.9m
100% EAS Tested	
100% V_{DS} Tested	

General Description

- Surface-mounted package
- 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

Applications

- High power inverter system
- Uninterruptible power supply
- LCDM appliances

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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	100	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25^\circ C$	I_D	30	A
	$T_A=100^\circ C$		19	
	$T_C=25^\circ C$		300	
	$T_C=100^\circ C$		190	
Pulsed Drain Current ^A		I_{DM}	1200	A
Avalanche energy ^B		EAS	480	mJ
Total Power Dissipation ^C	$T_A=25^\circ C$	P_D	4.15	W
	$T_A=100^\circ C$		1.65	
	$T_C=25^\circ C$		500	
	$T_C=100^\circ C$		200	
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	20	30	$^\circ C/W$
Thermal Resistance Junction-to-Case	Steady-State	R	0.2	0.25	

Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJT300G10HJ	F1	YJT300G10HJ	2000	4000	20000	13 reel



YJT300G10HJ

RECOMMEND
YJT300G10H
FOR NEW DESIGN

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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D$	100	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$	-	-	1	
		$V_{DS}=100V, V_{GS}=0V, T_J=150^\circ C$	-	-	100	
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D$	2	2.9	4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=30A$	-	1.2	1.45	
		$V_{GS}=6V, I_D=15A$	-	1.48	1.9	
Diode Forward Voltage	V_{SD}	$I_S=30A, V_{GS}=0V$	-	0.9	1.3	V
Maximum Body-Diode Continuous Current	I_S		-	-	300	A
Dynamic Parameters						
Input Capacitance	C_{iss}					

V_{DS}



Typical Electrical and Thermal Characteristics Diagrams

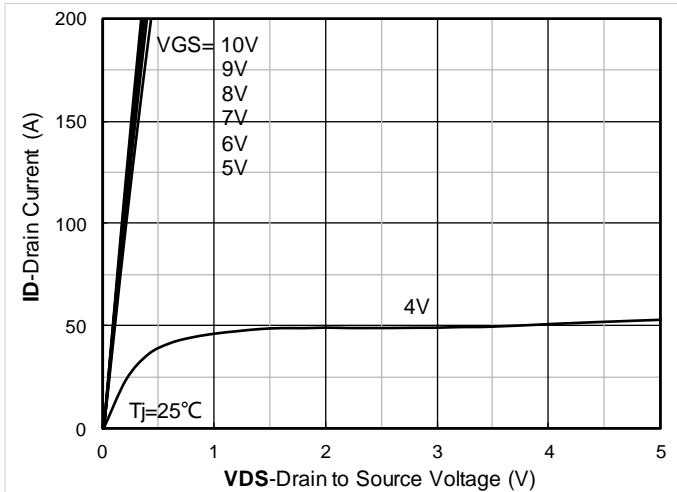


Figure 1. Output Characteristics

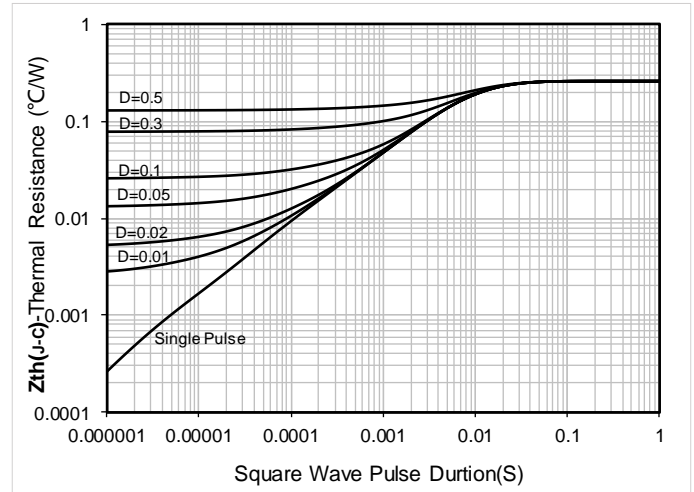


Figure 2. Maximum Transient Thermal Impedance

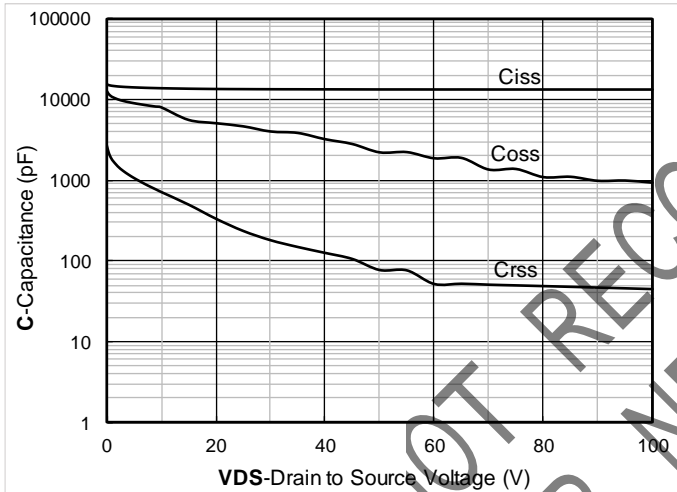


Figure 3. Capacitance Characteristics

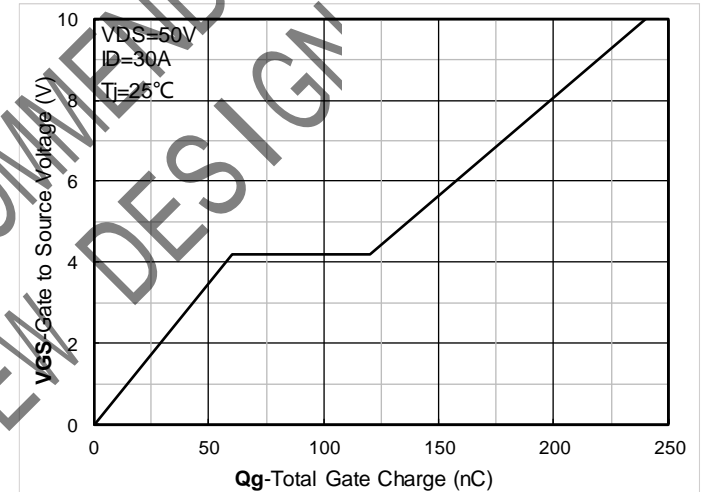


Figure 4. Gate Charge

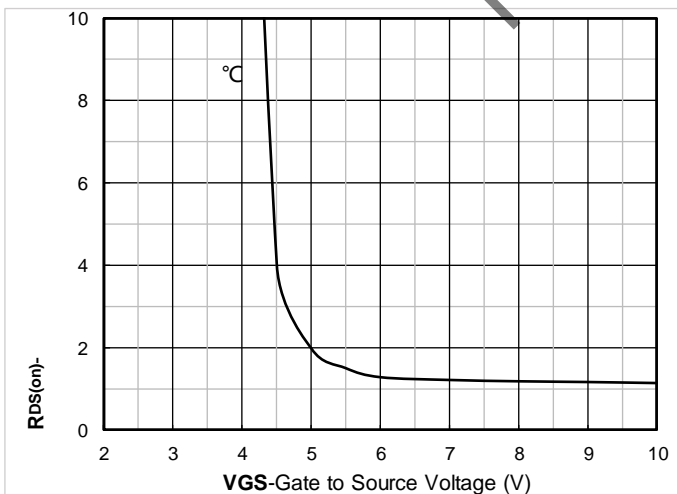


Figure 5. On-Resistance vs Gate to Source Voltage

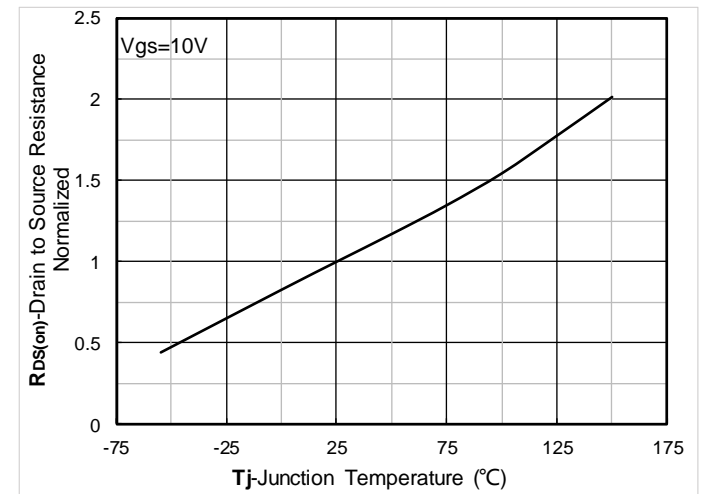


Figure 6. Normalized On-Resistance

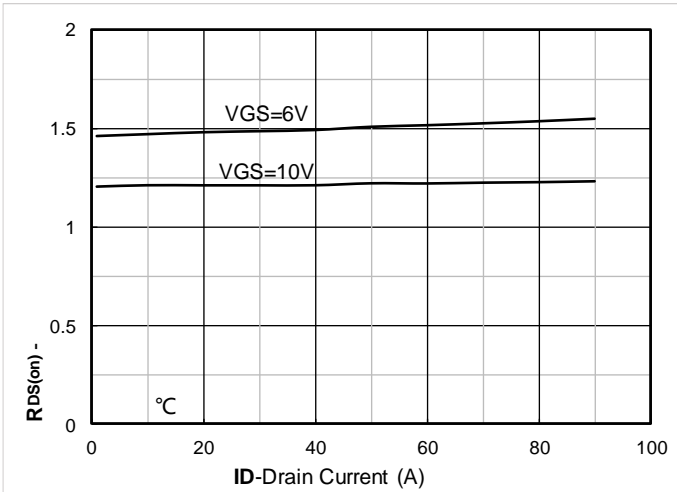


Figure 7. RDS(on) VS Drain Current

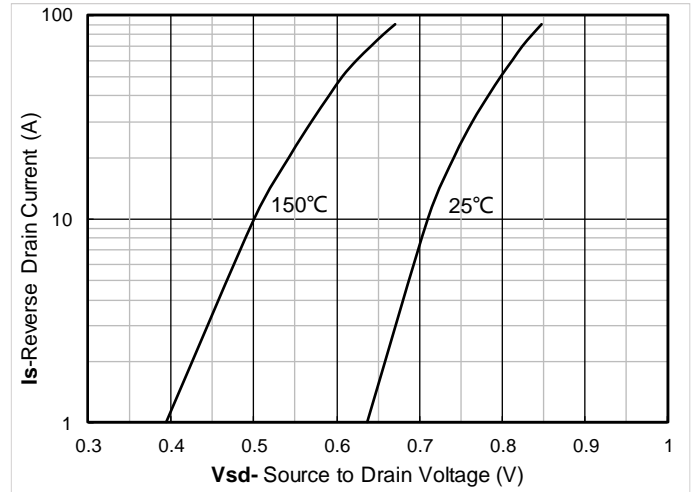


Figure 8. Forward characteristics of reverse diode

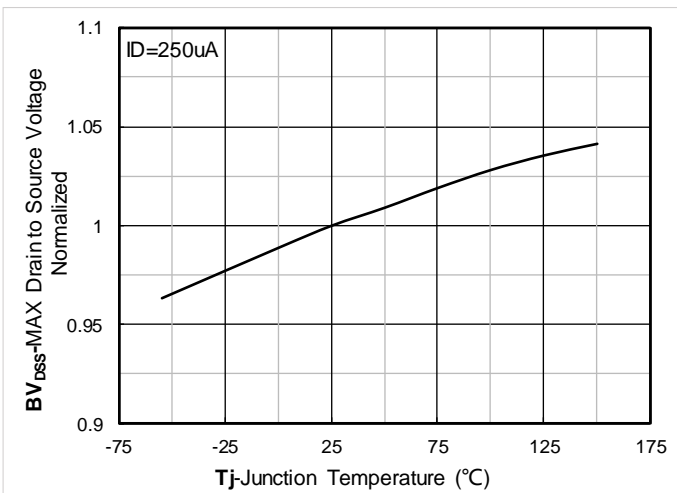


Figure 9. Normalized breakdown voltage

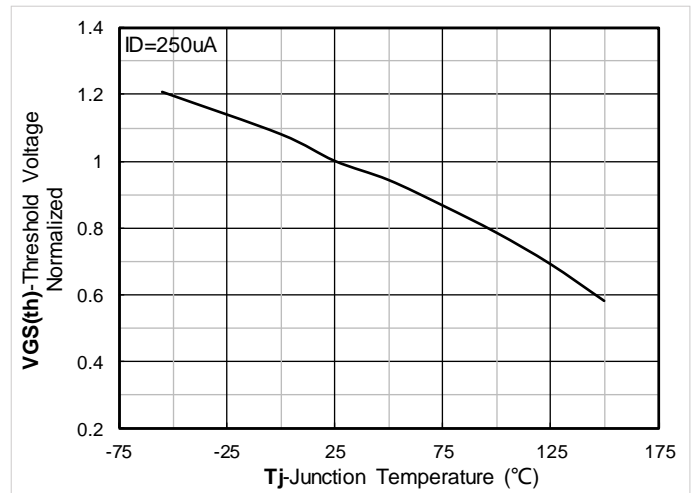


Figure 10. Normalized Threshold voltage

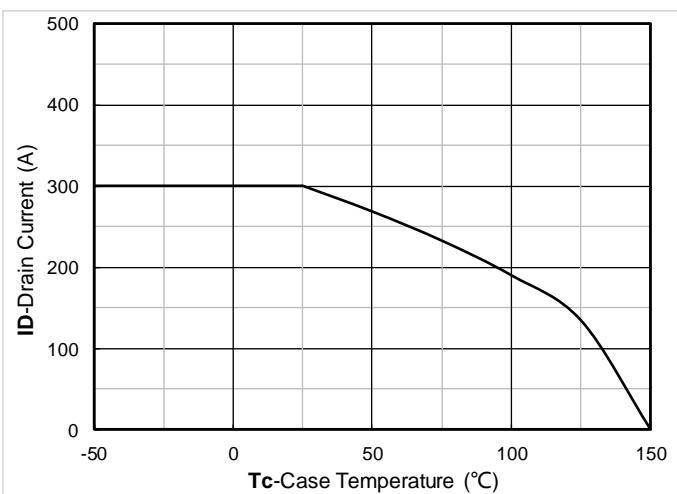


Figure 11. Current dissipation

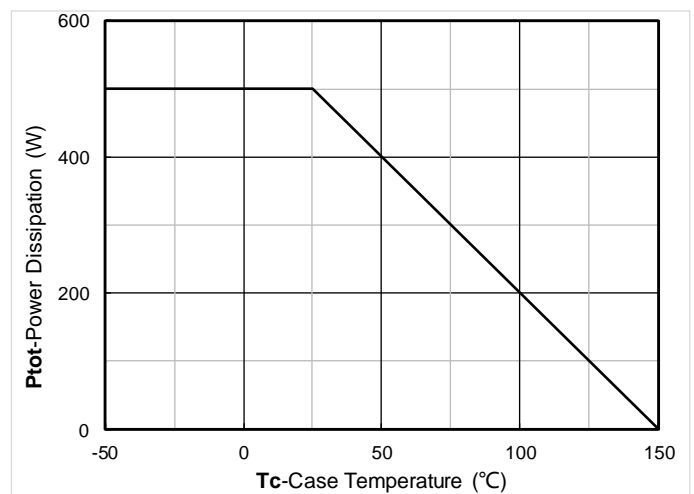


Figure 12. Power

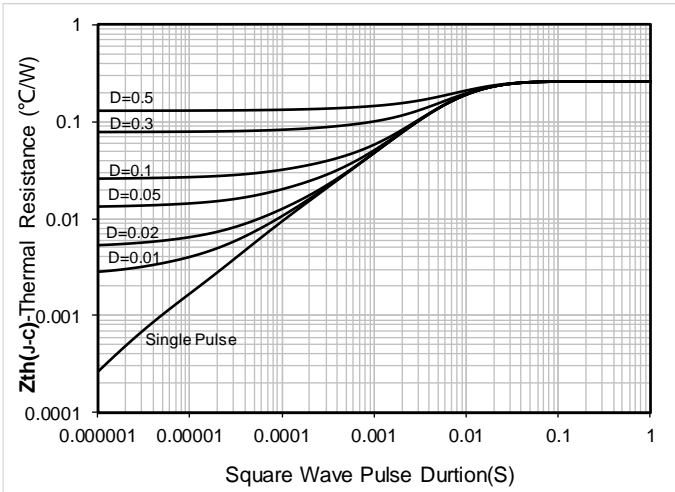


Figure 13. Maximum Transient Thermal Impedance

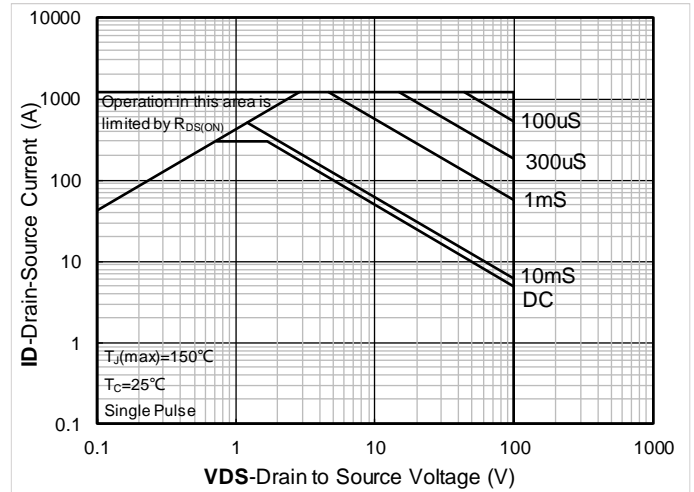


Figure 14. Safe Operation Area

Test Circuits & Waveforms

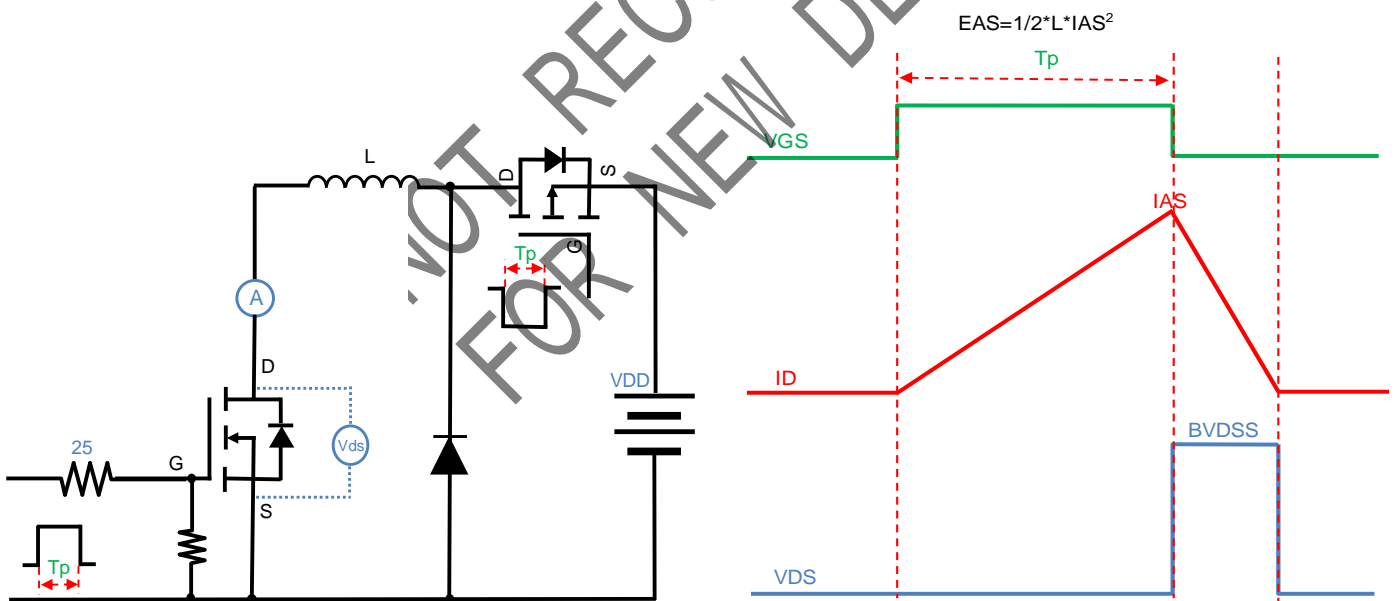


Figure A. Unclamped Inductive Switching (UIS) Test Circuit & Waveform

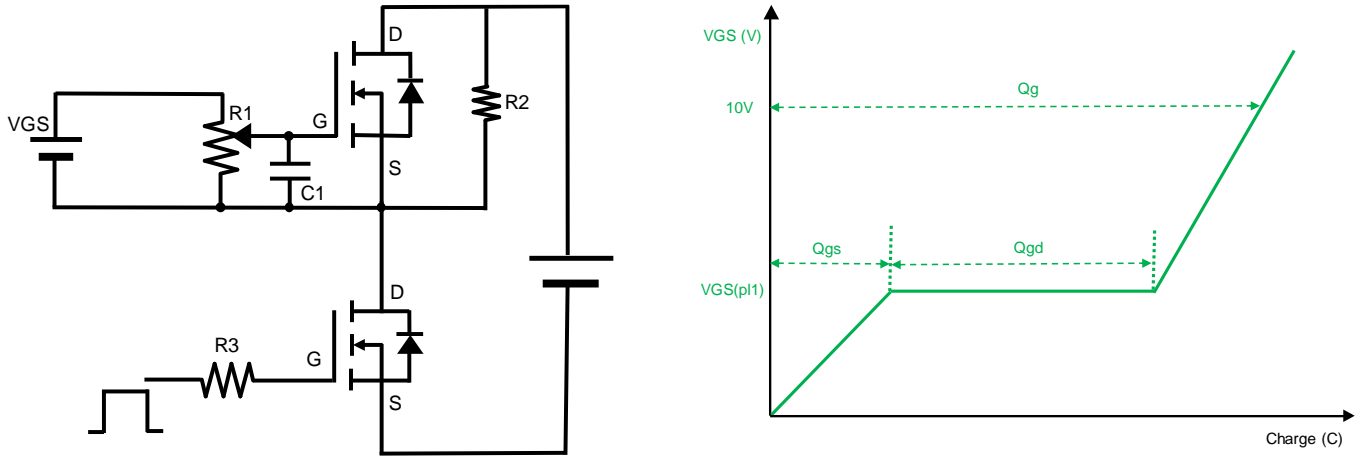


Figure B. Gate Charge Test Circuit & Waveform

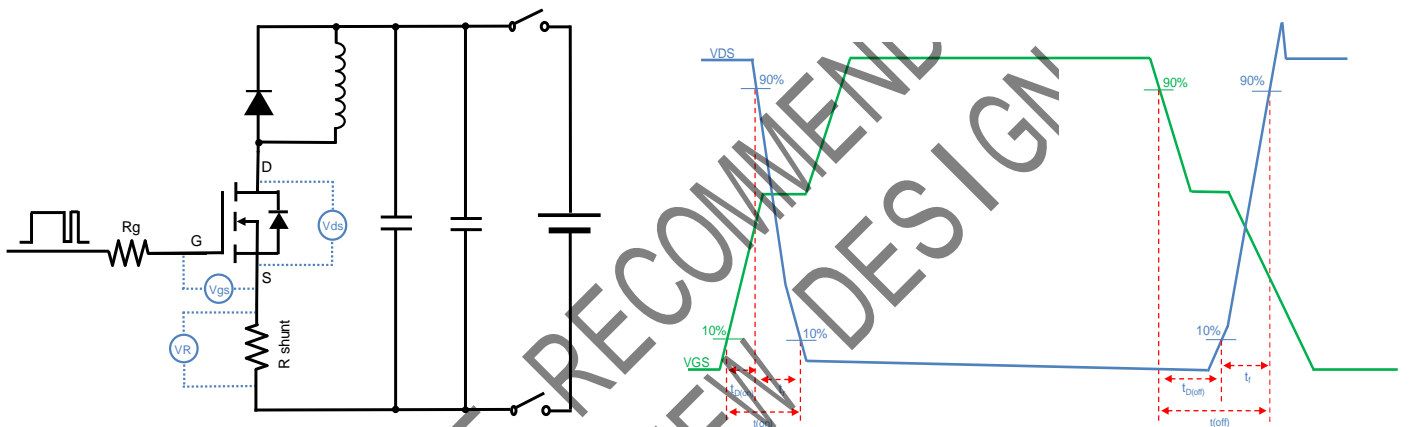


Figure C. Resistive Switching Test Circuit & Waveform

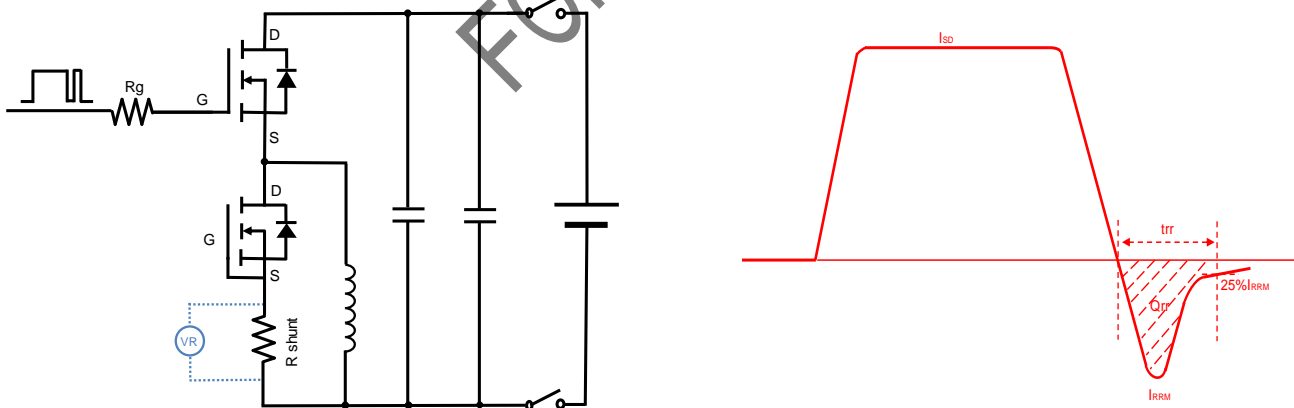


Figure D. Diode Recovery Test Circuit & Waveform



TOLL Package information

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	2.2	2.3	2.4
A1	1.7	1.8	1.9
b	0.7	0.8	0.9
b1	9.7	9.8	9.9
b2	1.1	1.2	1.3
c	0.4	0.5	0.6
D	10.28	10.38	10.48
D1	10.98	11.08	11.18
D2	3.2	3.3	3.4
D3	4.45	4.55	4.65
E	9.8	9.9	10
E1	8	8.1	8.2
e	1.2 BSC		
H	11.58	11.68	11.78
H1	6.95 BSC		
i	0.1 REF		
j	0.46 REF		
L	1.5	1.6	1.7
L1	0.6	0.7	0.8
L2	0.5	0.6	0.7
L3	0.3	0.4	0.5
Q	8 REF		
R	3.0	3.1	3.2

Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.03\text{mm}$.
3. The pad layout is for reference purposes only.

SUGGESTED SOLDER PAD LAYOUT
TOP VIEW

NOT RECOMMENDED
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