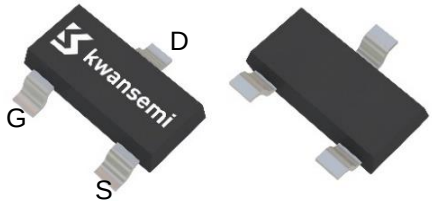
KS3369AA

Single P-Channel Advanced Power MOSFET

Features

- -30V/-3.4A,
  $R_{DS\ (ON)}$ =48mΩ(Typ.)@V_{GS}=-10V
  $R_{DS\ (ON)}$ =65mΩ(Typ.)@V_{GS}=-4.5V
- Low $R_{DS\ (ON)}$
- Super High Dense Cell Design
- Reliable and Rugged

Pin Description



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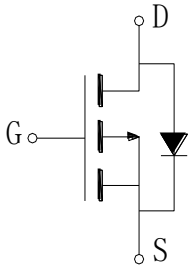


Single P-Channel MOSFET

Applications

- Load Switch

RoHS Pb HF Halogen-Free

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (T_A=25°C Unless Otherwise Noted)				
V_{DSS}	Drain-Source Voltage		-30	V
V_{GSS}	Gate-Source Voltage		±20	
T_{Jmax}	Maximum Junction Temperature		150	°C
T_J,T_{STG}	Operating and Storage Temperature Range		-55 to 150	°C
I_S	Diode Continuous Forward Current	T_A=25°C	-1.1	A
Mounted on Large Heat Sink				
I_{DP} ①	Pulse Drain Current	T_A=25°C	-13	A
I_D ②	Continuous Drain Current(V_{GS}=-10V)	T_A=25°C	-3.4	A
		T_A=70°C	-2.7	
P_D	Maximum Power Dissipation	T_A=25°C	1	W
		T_A=70°C	0.64	
$R_{\theta JL}$	Thermal Resistance-Junction to Lead		80	°C/W
$R_{\theta JA}$ ③	Thermal Resistance-Junction to Ambient		125	°C/W
Drain-Source Avalanche Ratings				
E_{AS} ④	Avalanche Energy, Single Pulsed		12	mJ

Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

Symbol	Parameter	Test Condition	KS3369AA			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_{DS}=-250μA	-30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-30V, V_{GS}=0V			-1	μA
		T_J=125°C			-30	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_{DS}=-250μA	-1.1	-1.6	-2.3	V
I_{GSS}	Gate Leakage Current	V_{GS}=±20V, V_{DS}=0V			±100	nA
$R_{DS(ON)}$ ⑤	Drain-Source On-state Resistance	V_{GS}=-10V, I_{DS}=-3A		48	58	mΩ
		V_{GS}=-4.5V, I_{DS}=-2A		65	85	mΩ
Diode Characteristics						
V_{SD} ⑤	Diode Forward Voltage	I_{SD}=-3A, V_{GS}=0V		-0.85	-1.2	V
t_{rr}	Reverse Recovery Time	I_{SD}=-3A, dI_{SD}/dt=-100A/μs		14		ns
Q_{rr}	Reverse Recovery Charge			10		nC
Dynamic Characteristics ⑥						
R_G	Gate Resistance	V_{GS}=0V,V_{DS}=0V,F=1MHz		90		Ω
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=-15V, Frequency=1.0MHz		310		pF
C_{oss}	Output Capacitance			45		
C_{rss}	Reverse Transfer Capacitance			30		
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=-15V, I_{DS}=-3A, V_{GEN}=-10V,R_G=6Ω		7		ns
t_r	Turn-on Rise Time			9		
$t_{d(OFF)}$	Turn-off Delay Time			14		
t_f	Turn-off Fall Time			6		
Gate Charge Characteristics ⑥						
Q_g	Total Gate Charge	V_{DS}=-15V, V_{GS}=-10V, I_{DS}=-3A		8.2		nC
Q_{gs}	Gate-Source Charge			1.6		
Q_{gd}	Gate-Drain Charge			2		

Notes:

①Pulse width limited by safe operating area.

②Calculated continuous current based on maximum allowable junction temperature.

③When mounted on 1 inch square copper board, t≤10sec. The value in any given application depends on the user's specific board design.

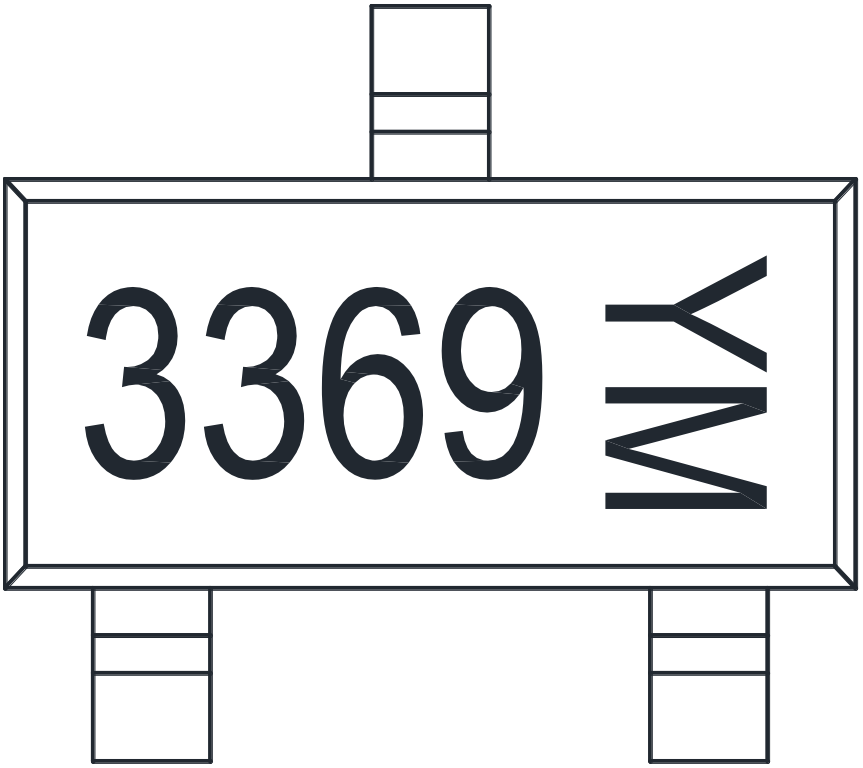
④Limited by $T_{Jmax,}$ Starting T_J = 25°C, I_{ASmax} = -7A, L = 0.5mH, V_{DD}=-20V, R_G = 25Ω, V_{GS} =-10V.Part not recommended for use above this value.

⑤Pulse test;Pulse width≤300μs, duty cycle≤2%.

⑥Guaranteed by design, not subject to production testing.

Ordering and Marking Information

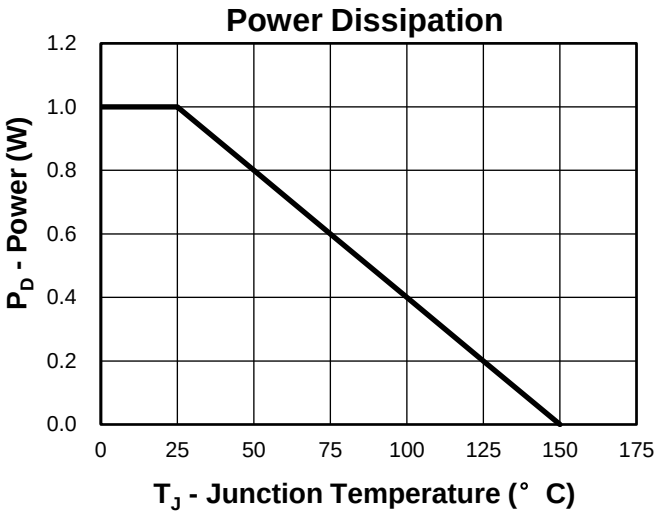
Device	Package	Packaging	Quantity	Reel Size	Tape width
KS3369AA	SOT23	Tape&Reel	3000	7”	8mm

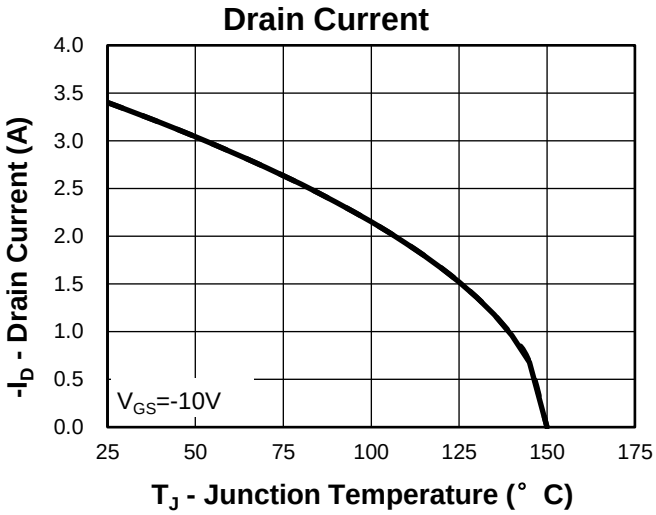


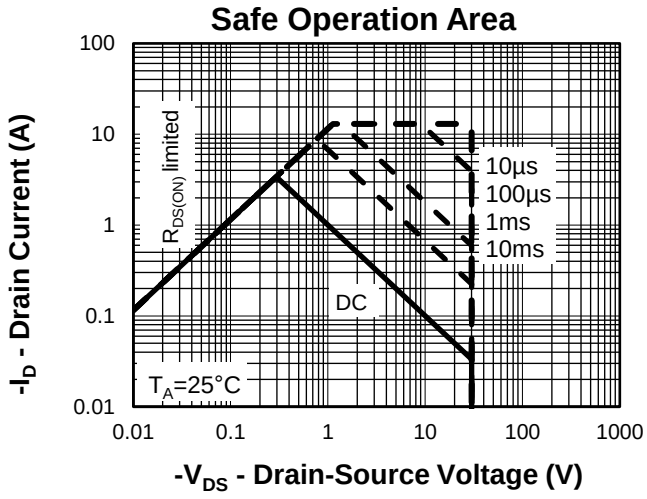
Y =Year,2017-A,2018-B,etc.

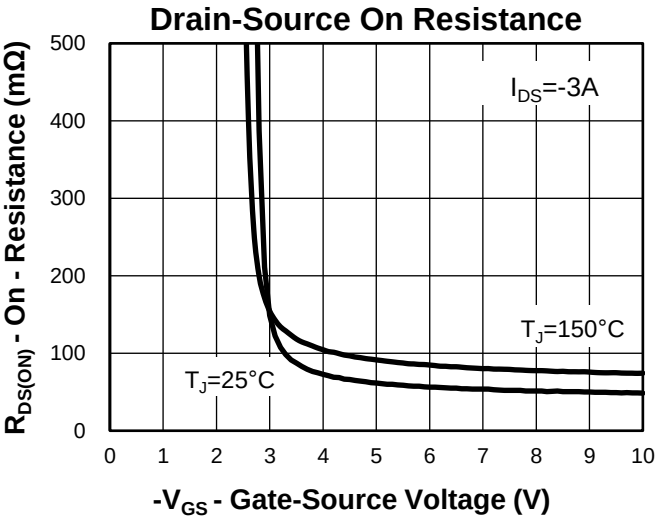
M =Month,Jan-1,Feb-2,....Sep-9,Oct-A,Nov-B,Dec-C.

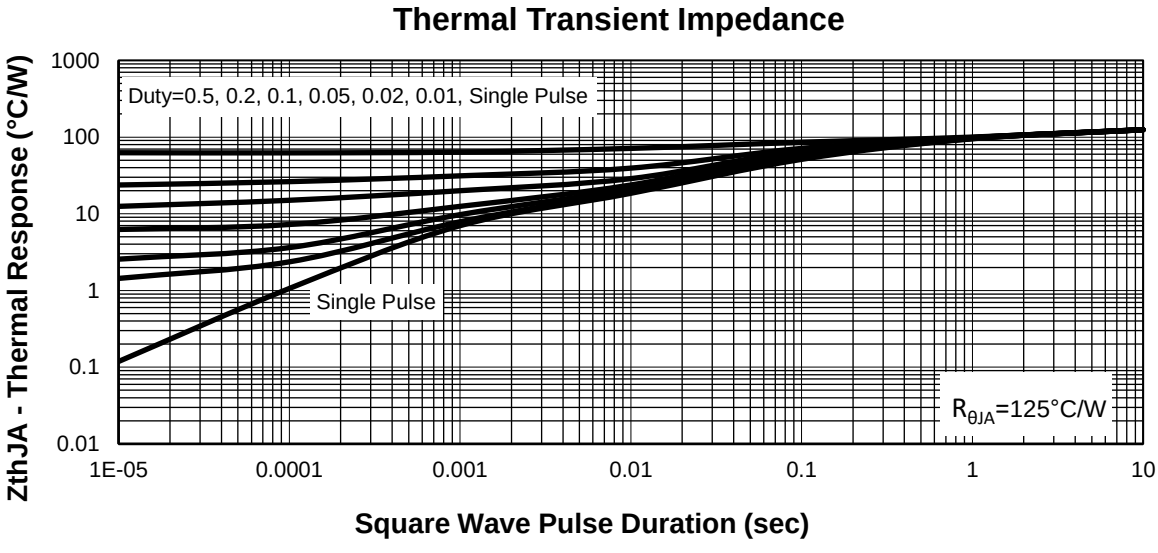
Typical Characteristics











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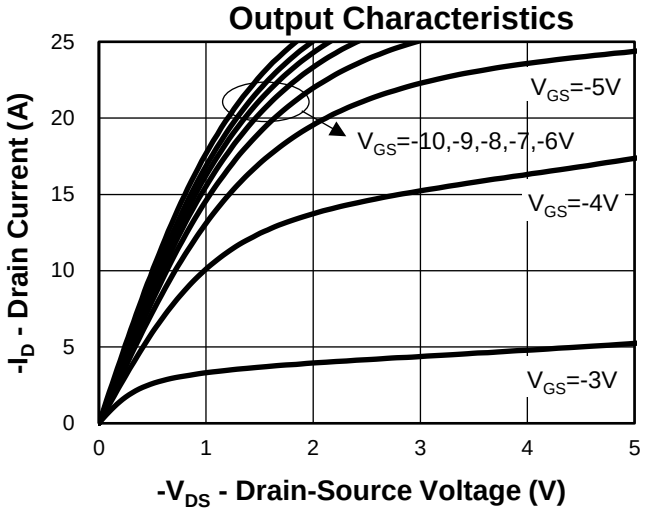
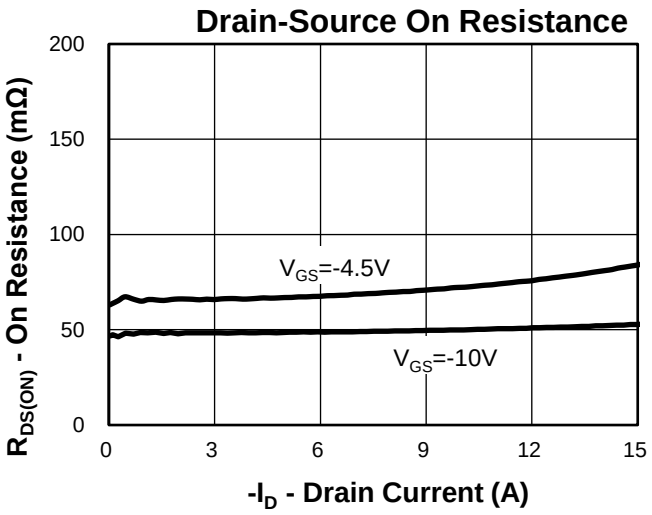
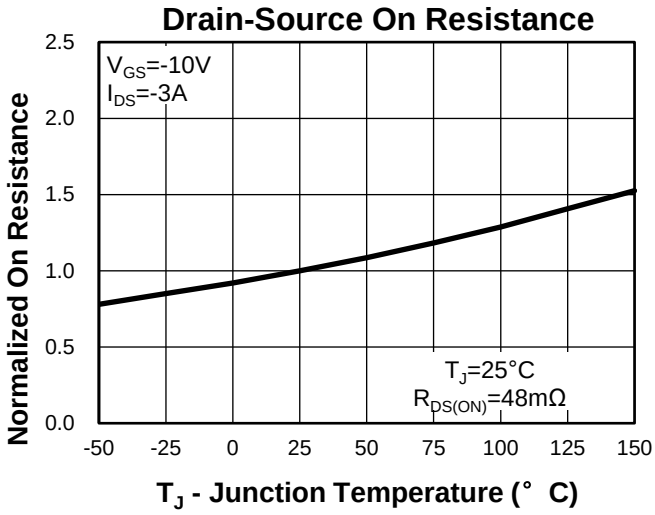
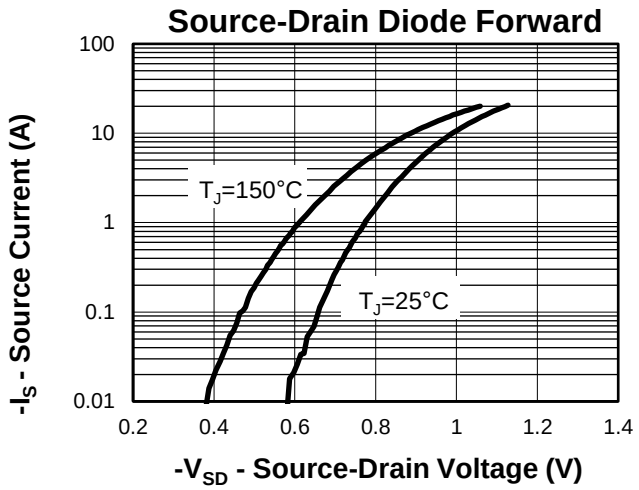
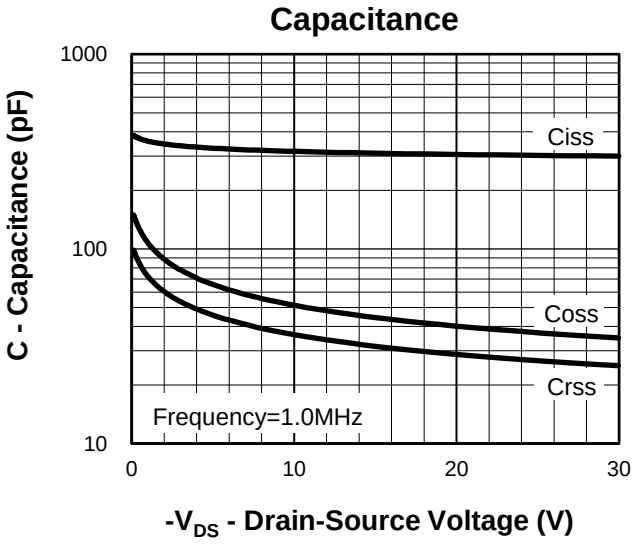
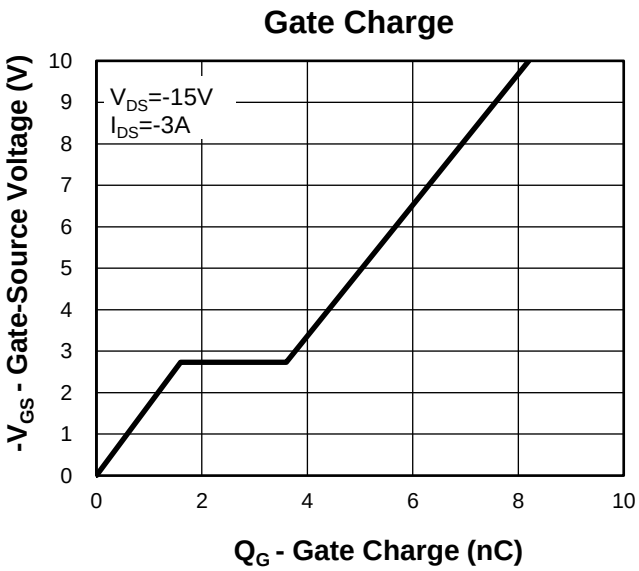






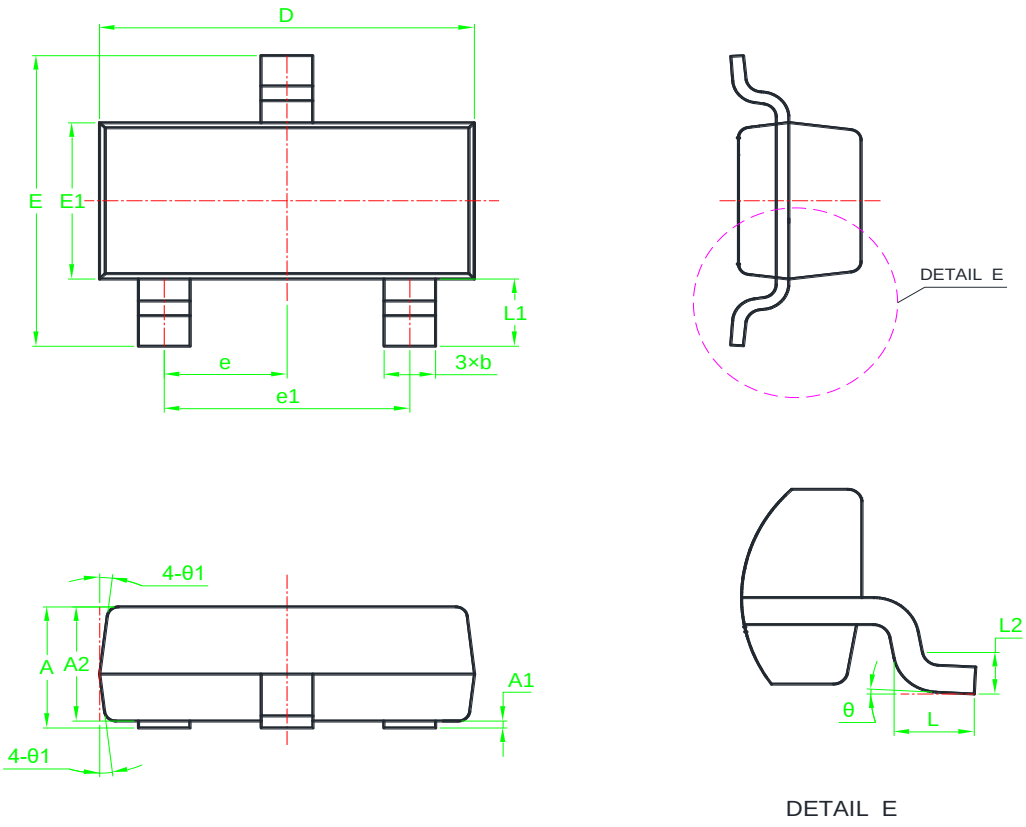






Package Information

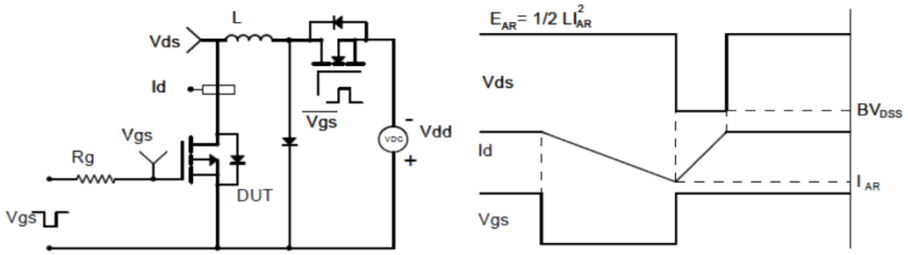
SOT23



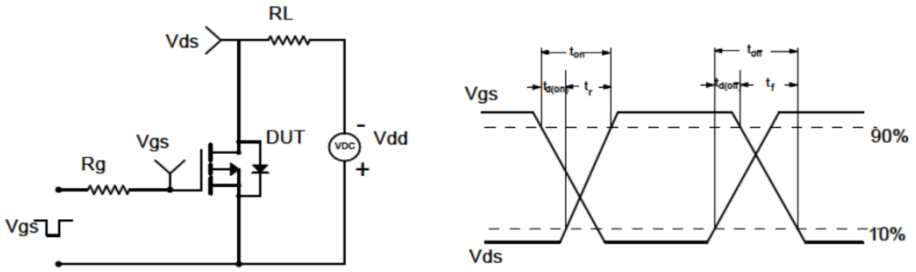
SYMBOL	MM			INCH			SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX		MIN	NOM	MAX	MIN	NOM	MAX
A	0.90	*	1.12	0.035	*	0.044	e	0.95BSC			0.037BSC		
A1	0.01	*	0.10	0.000	*	0.004	e1	1.90BSC			0.075BSC		
A2	0.80	0.90	1.02	0.031	0.035	0.040	L	0.30	0.40	0.50	0.012	0.016	0.020
b	0.30	0.40	0.50	0.012	0.016	0.020	L1	0.54REF			0.021REF		
D	2.80	2.90	3.00	0.110	0.114	0.118	L2	0.254BSC			0.010BSC		
E	2.25	2.40	2.55	0.089	0.094	0.100	θ	0°	*	8°	0°	*	8°
E1	1.20	1.30	1.40	0.047	0.051	0.055	θ1	0°	*	10°	0°	*	10°

Note: Dimensions do not inclusive burrs and mold flash.

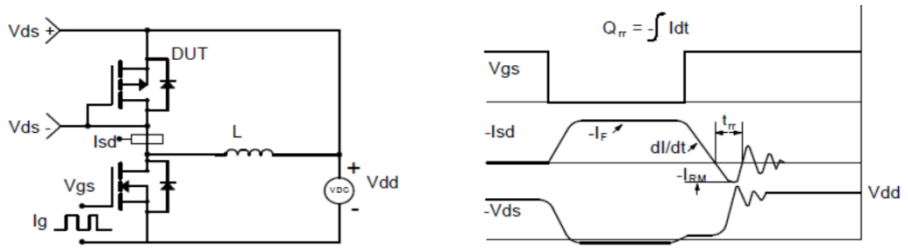
Avalanche Test Circuit and Waveforms



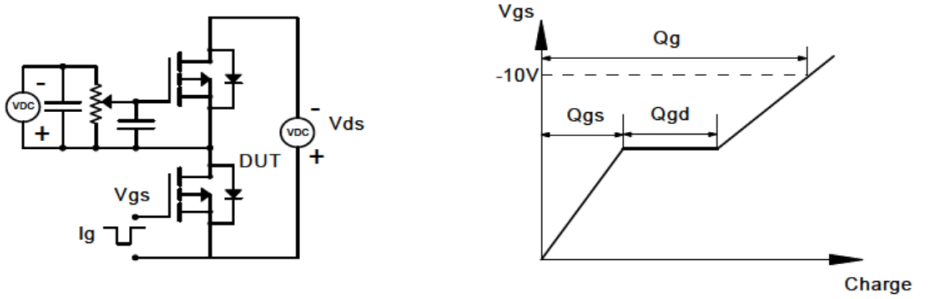
Switching Time Test Circuit and Waveforms



Diode Recovery Test Circuit and Waveforms



Gate Charge Test Circuit and Waveform



Customer Service

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