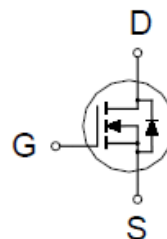
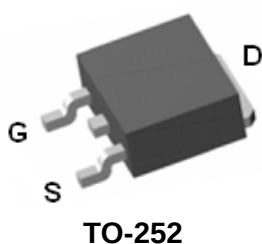


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N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
80V	80mΩ @ $V_{GS} = 10V$	15A



ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V _{DS}	80	V
Gate-Source Voltage		V _{GS}	±25	
Continuous Drain Current	T _C = 25 °C	I _D	15	A
	T _C = 100 °C		10	
Pulsed Drain Current ¹		I _{DM}	60	
Avalanche Current ¹		I _{AS} , I _{AR}	23	
Avalanche Energy	L=0.1mH	E _{AS}	27	mJ
Repetitive Avalanche Energy ¹		E _{AR}	See Figure5,6	
Power Dissipation	T _C = 25 °C	P _D	39	W
	T _C = 100 °C		15	
Junction & Storage Temperature Range		T _J , T _{STG}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		3.2	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		50	

¹Pulse width limited by maximum junction temperature.

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ELECTRICAL CHARACTERISTICS (T_C = 25 °C, Unless Otherwise Noted)

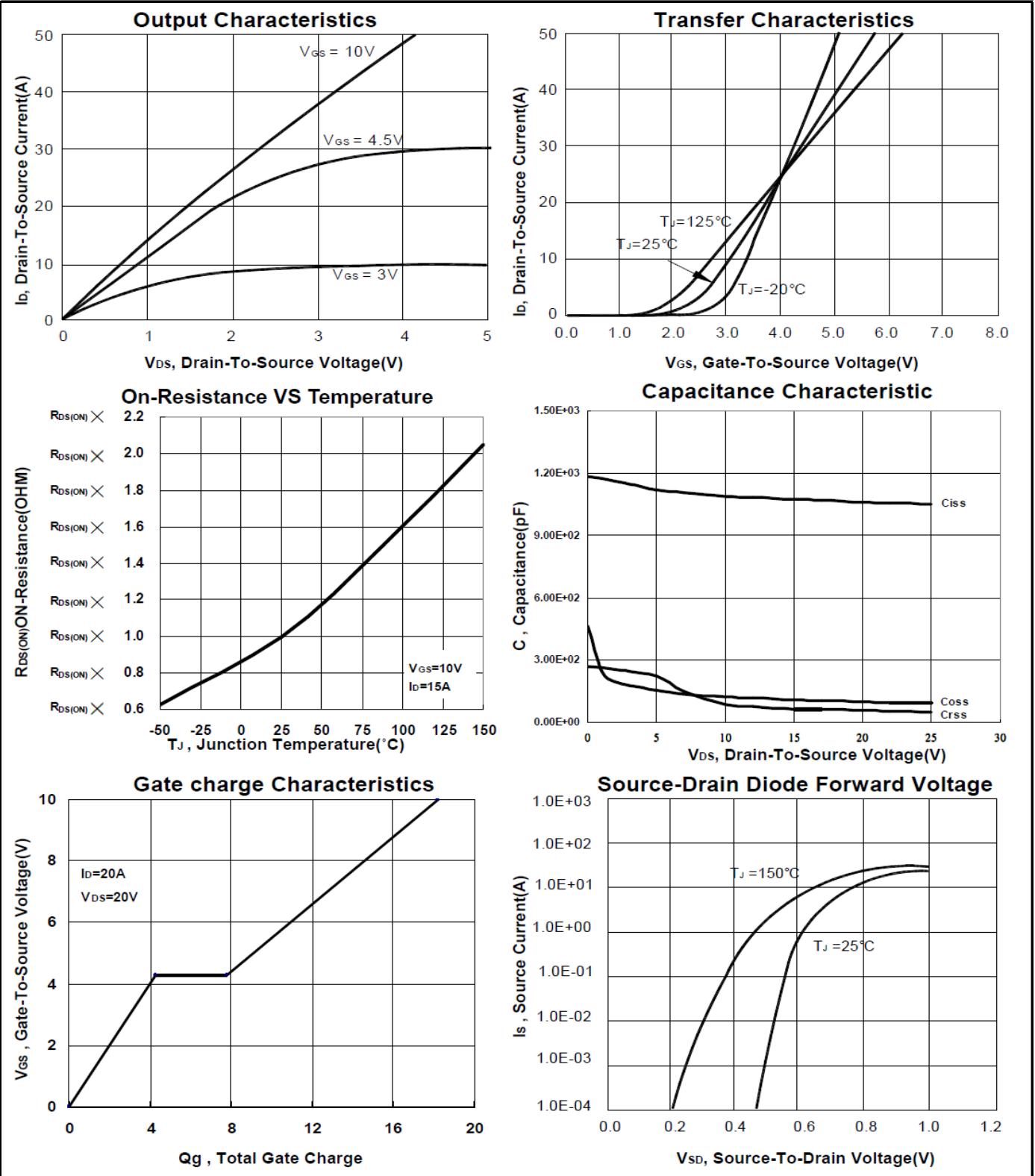
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	80			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.9	3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±25V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 64V, V _{GS} = 0V			1	μA
		V _{DS} = 60V, V _{GS} = 0V , T _J = 125°C			10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 5V, V _{GS} = 10V	60			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} =4.5V, I _D = 10A		65	95	mΩ
		V _{GS} = 10V, I _D = 15A		56	80	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 15A		15		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		1070		pF
Output Capacitance	C _{oss}			95		
Reverse Transfer Capacitance	C _{rss}			55		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		1.35		Ω
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = 10V, I _D = 15A		18.6		nC
Gate-Source Charge ²	Q _{gs}			4.5		
Gate-Drain Charge ²	Q _{gd}			3.8		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 40V, R _L =15Ω I _D ≅ 15A, V _{GS} = 10V, R _{GEN} = 6Ω		25		nS
Rise Time ²	t _r			290		
Turn-Off Delay Time ²	t _{d(off)}			50		
Fall Time ²	t _f			160		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current	I _S				15	A
Forward Voltage ¹	V _{SD}	I _F = I _S , V _{GS} = 0V			1	V
Reverse Recovery Time	t _{rr}	I _F =15A,dI _F /dt=100A/μS		55		nS
Reverse Recovery Charge	Q _{rr}			85		nC

¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

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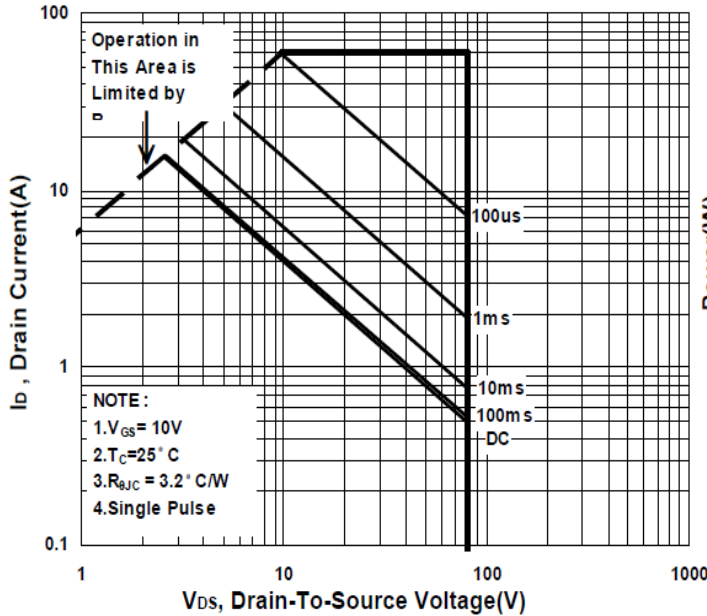
N-Channel Enhancement Mode MOSFET



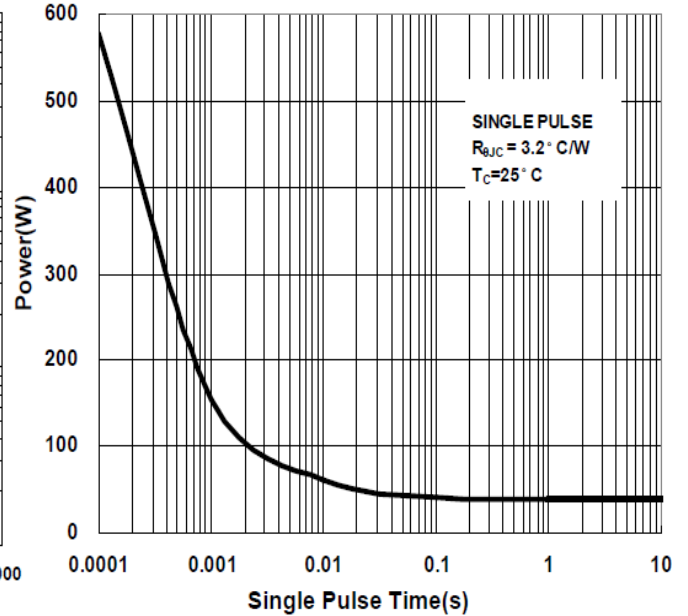
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N-Channel Enhancement Mode MOSFET

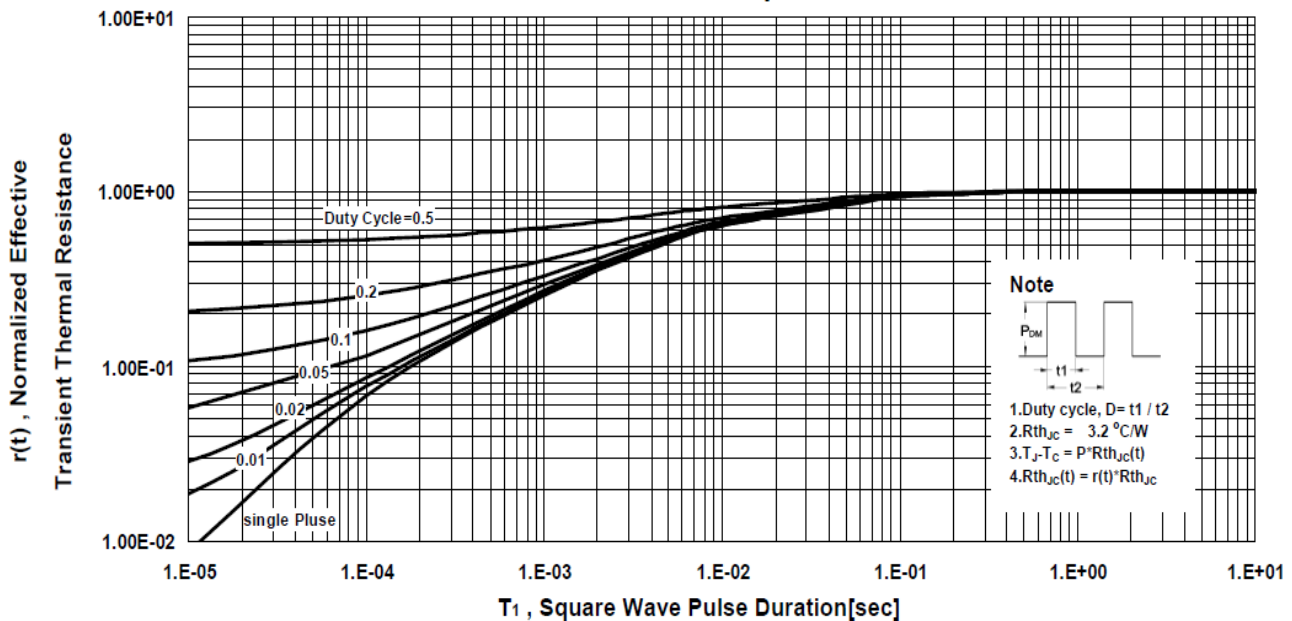
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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Figure 1
Gate Charge Test Circuit

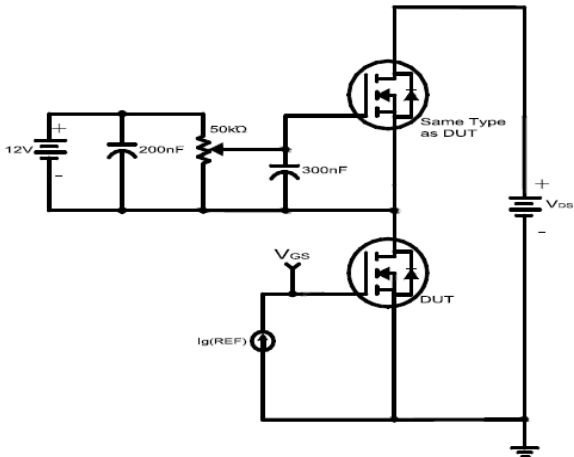


Figure 2
Gate Charge Waveforms

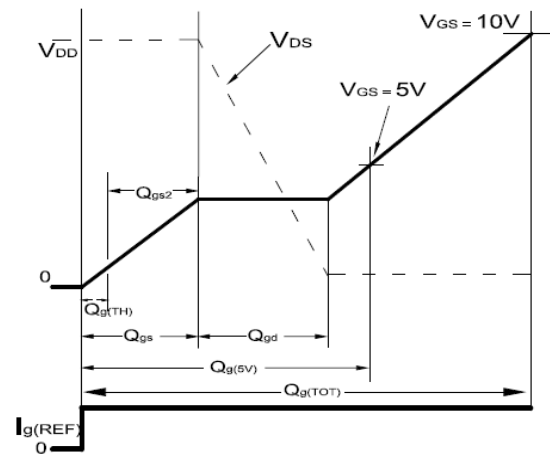


Figure 3
Switching Time Test Circuit

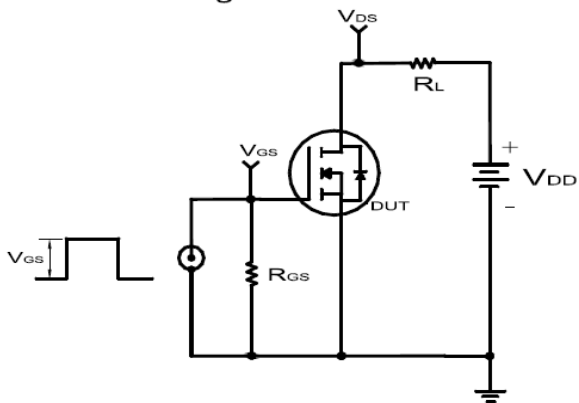


Figure 4
Switching Time Waveforms

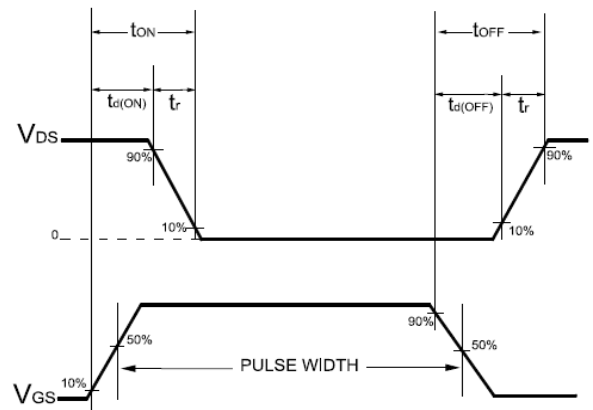


Figure 5
Unclamped Energy Test Circuit

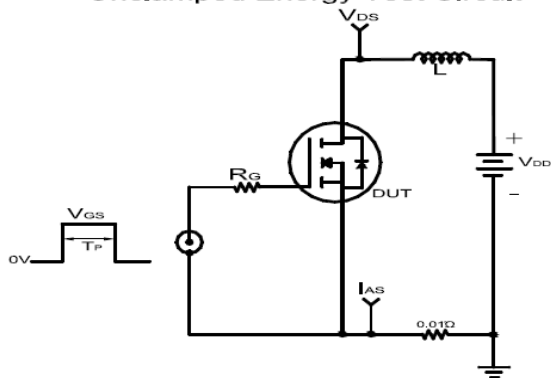
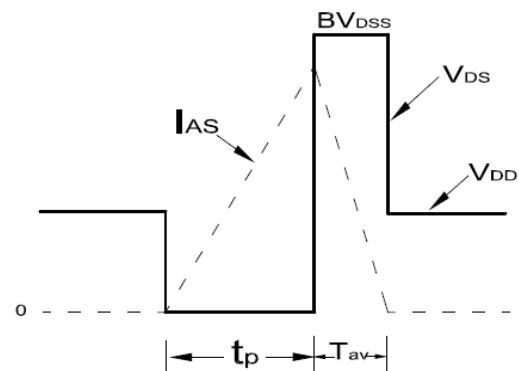


Figure 6
Unclamped Energy Waveforms



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Figure 7
Diode Recovery Test Circuit

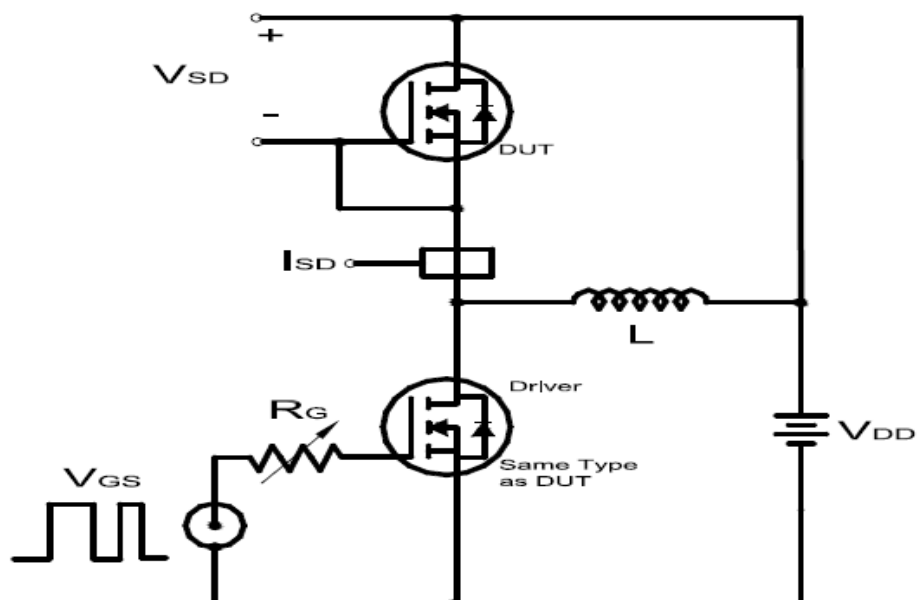
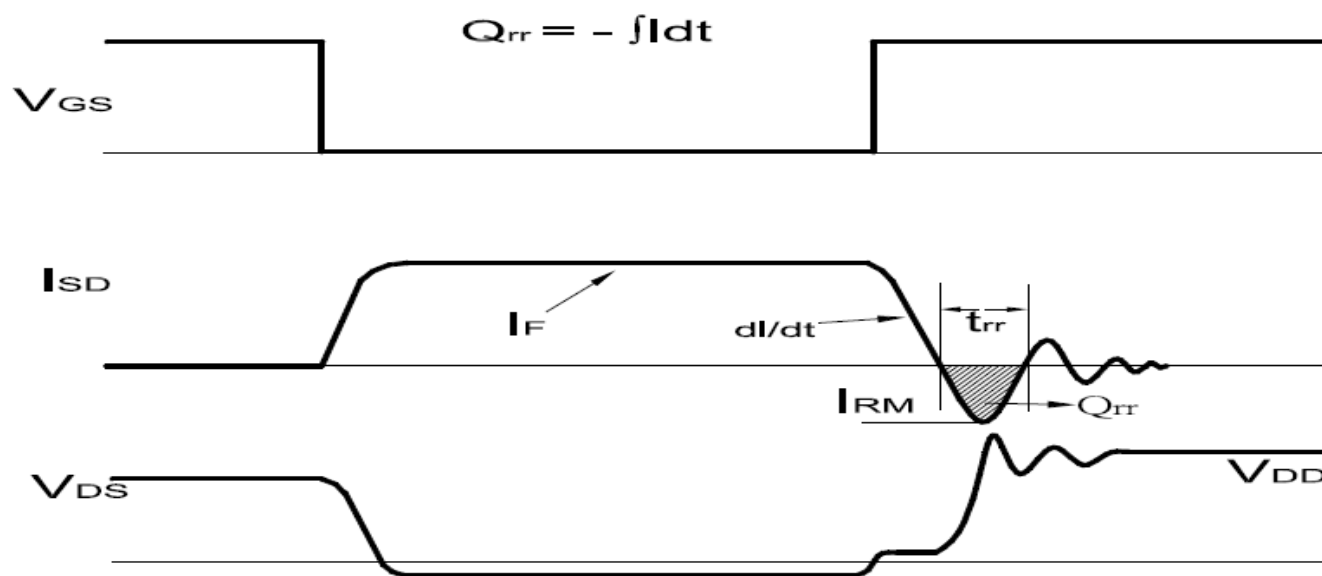


Figure 8
Diode Recovery Test Waveforms



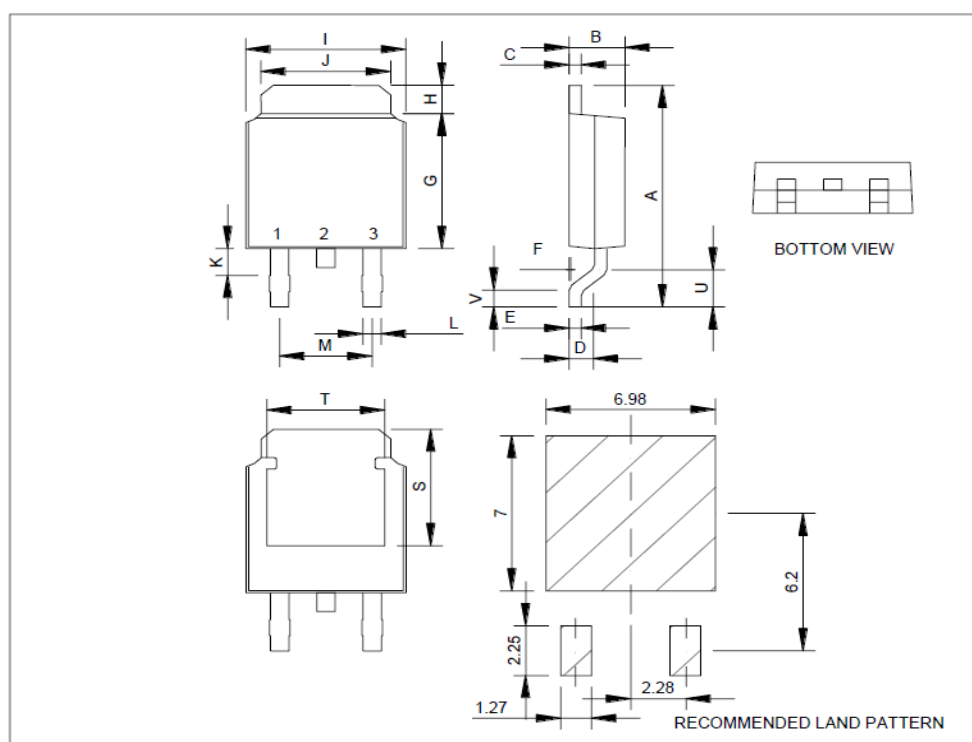
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Package Dimension

TO-252 (DPAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	8.9	10	10.41	J	4.8		5.64
B	2.1	2.2	2.4	K	0.15		1.1
C	0.4	0.5	0.61	L	0.4	0.76	0.89
D	0.82	1.2	1.5	M	4.2	4.58	5
E	0.4	0.5	0.61	S	4.9	5.1	5.3
F	0		0.2	T	4.6	4.75	5.44
G	5.3	6.1	6.3	U	1.4		1.78
H	0.9		1.7	V	0.55	1.25	1.7
I	6.3	6.5	6.8				



*因为各家封装模具不同而外观略有所差异，不影响电性及Layout。