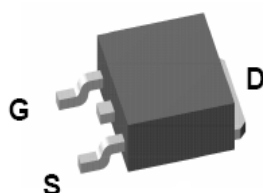


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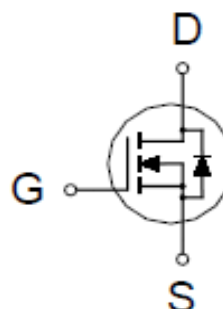
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	5.8mΩ @ $V_{GS} = 10V$	78A



TO-252



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ²	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	78	A
	$T_C = 100\text{ }^{\circ}\text{C}$		49	
Pulsed Drain Current ¹		I_{DM}	140	
Avalanche Current		I_{AS}	35	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	61.2	mJ
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	60	W
	$T_C = 100\text{ }^{\circ}\text{C}$		24	
Operating Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^{\circ}\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		2.08	$^{\circ}\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Package limitation current is 60A.

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ELECTRICAL CHARACTERISTICS (T_j = 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	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.2	1.7	3	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} = 0V			1	μA
		V _{DS} =20V, V _{GS} = 0V, T _J = 125°C			10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 10V, V _{GS} = 10V	140			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} =4.5V, I _D =20A		5.3	7.8	mΩ
		V _{GS} =10V, I _D =20A		4.2	5.8	
Forward Transconductance ¹	g _{fs}	V _{DS} =5V, I _D =20A		44		S
DYNAMIC						
Input Capacitance	C _{iSS}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		1730		pF
Output Capacitance	C _{oss}			238		
Reverse Transfer Capacitance	C _{rSS}			189		
Gate Resistance	R _g	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz		0.9		Ω
Total Gate Charge ²	Q _g	V _{DS} = 15V, V _{GS} = 10V, I _D = 20A		40		nC
Gate-Source Charge ²	Q _{gs}			6		
Gate-Drain Charge ²	Q _{gd}			11		
Turn-On Delay Time ²	t _{d(on)}	V _{DS} = 15V , I _D ≅ 20A, V _{GS} = 10V, R _{GEN} =6Ω		22		nS
Rise Time ²	t _r			42		
Turn-Off Delay Time ²	t _{d(off)}			159		
Fall Time ²	t _f			92		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current ³	I _S				78	A
Forward Voltage ¹	V _{SD}	I _F = 20A, V _{GS} = 0V			1.3	V
Reverse Recovery Time	t _{rr}	I _F = 20A, dI _F /dt = 100A /μs		24		nS
Reverse Recovery Charge	Q _{rr}			12.3		nC

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

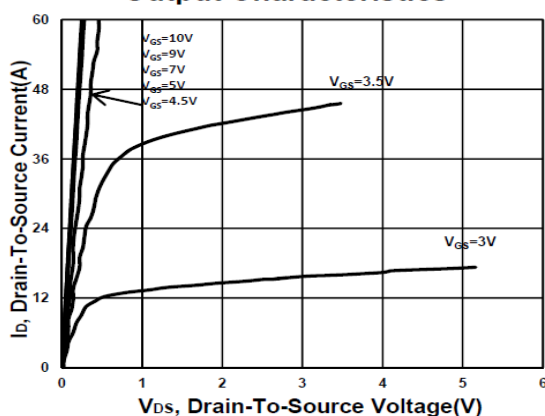
²Independent of operating temperature.

³Package limitation current is 60A.

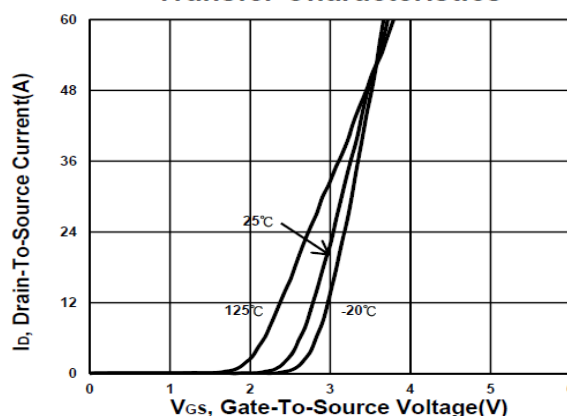
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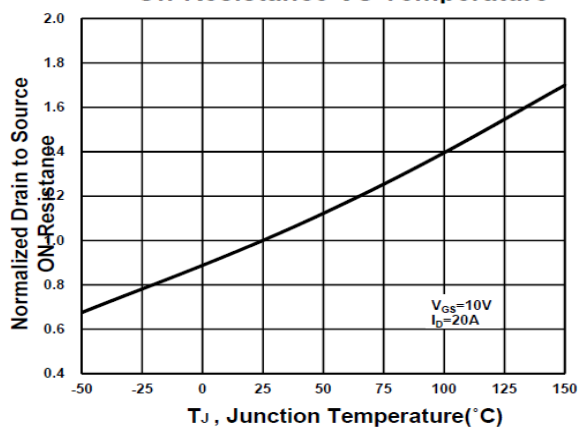
Output Characteristics



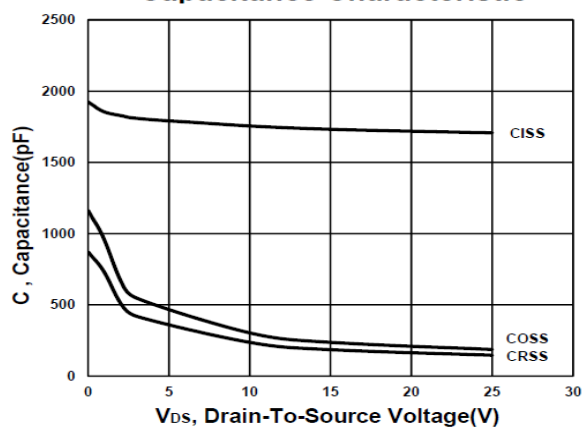
Transfer Characteristics



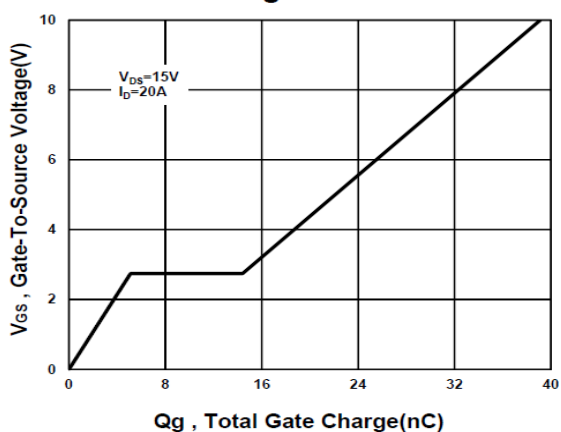
On-Resistance VS Temperature



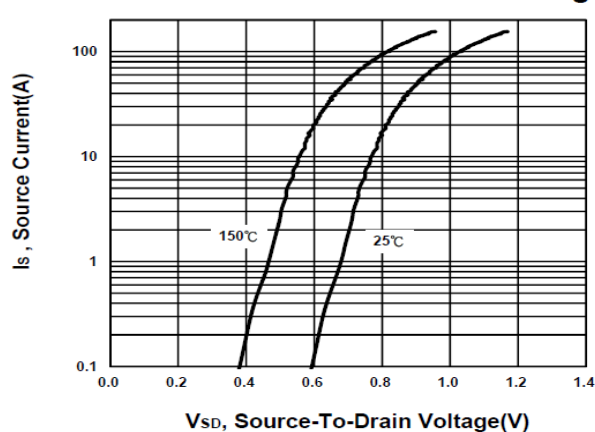
Capacitance Characteristic



Gate charge Characteristics



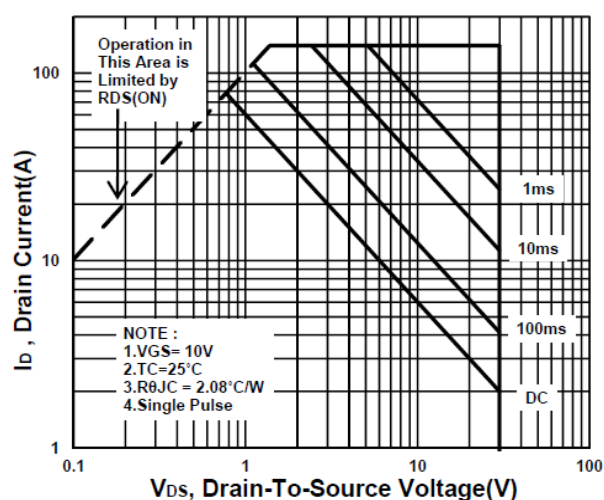
Source-Drain Diode Forward Voltage



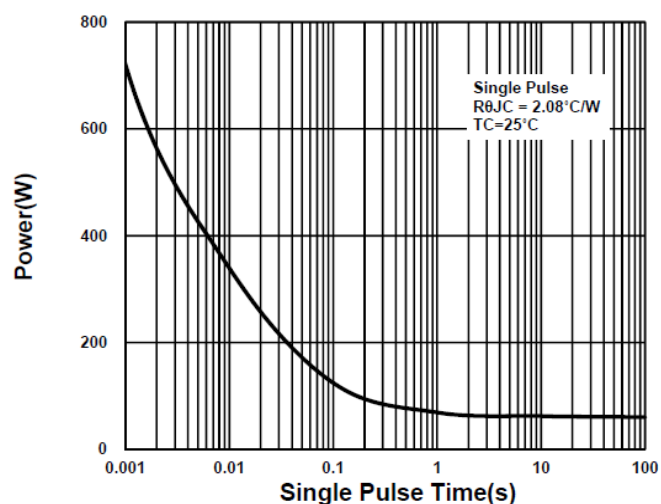
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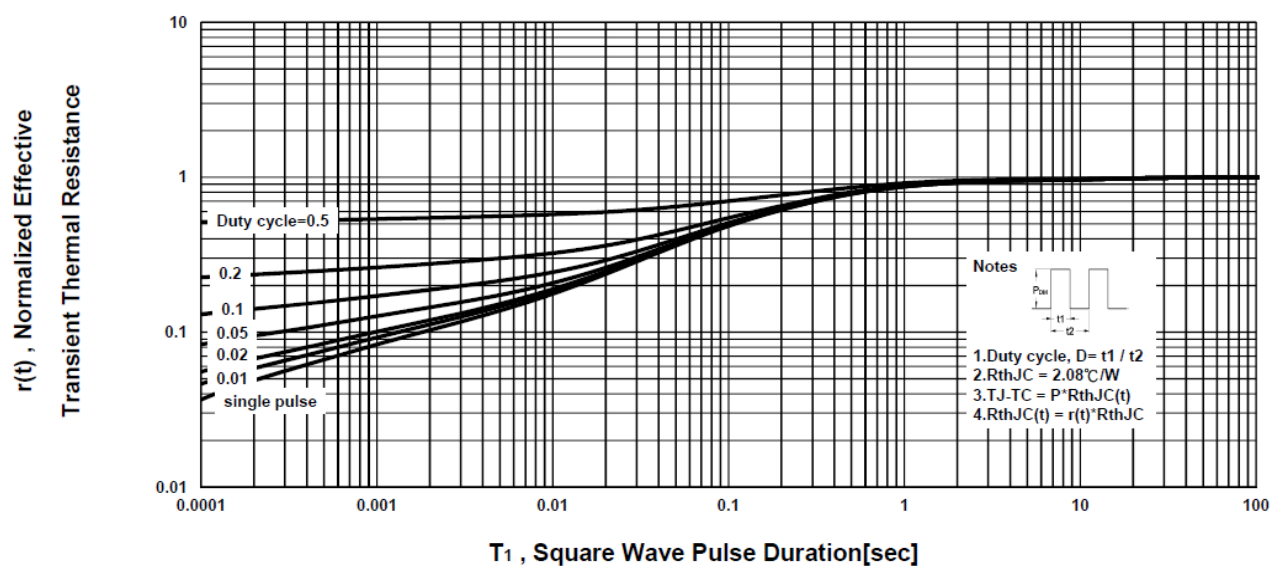
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



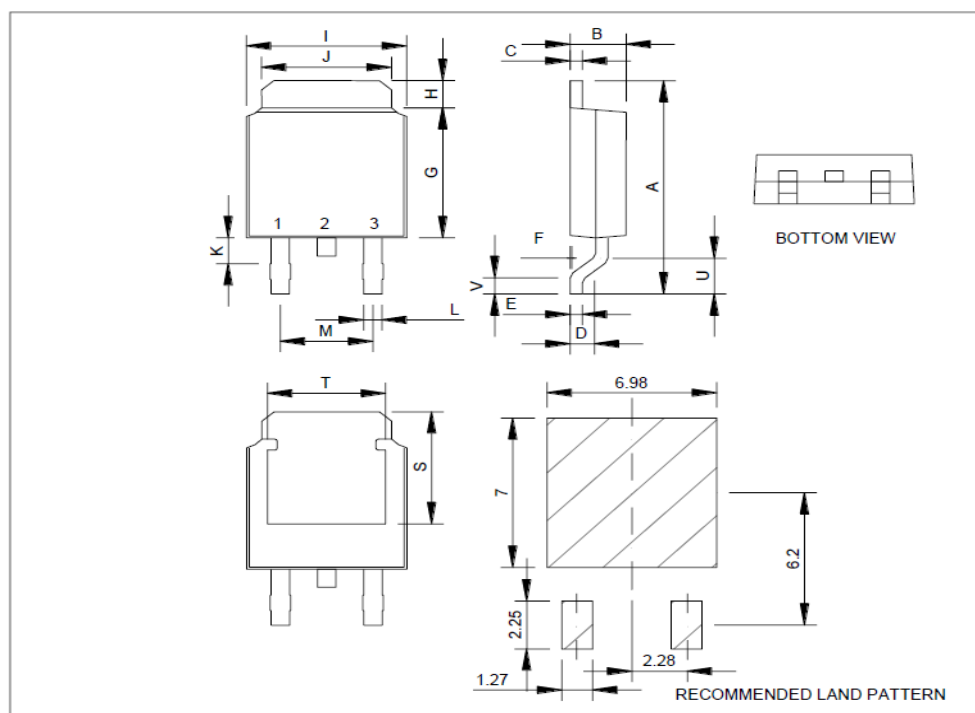
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Package Dimension

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。