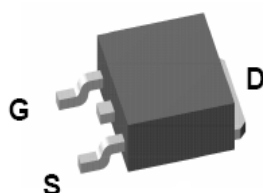


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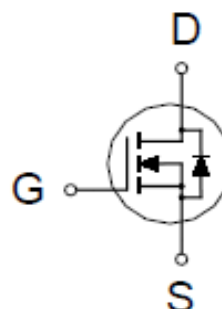
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	$7.5m\Omega @ V_{GS} = 10V$	57A



TO-252



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	57	A
	$T_C = 100\text{ }^{\circ}\text{C}$		36	
Pulsed Drain Current ¹		I_{DM}	160	
Avalanche Current		I_{AS}	34	
Avalanche Energy	$L = 0.1mH$	E_{AS}	60	mJ
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	49	W
	$T_C = 100\text{ }^{\circ}\text{C}$		19	
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	Steady-State	$R_{\theta JC}$		2.55	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	Steady-State	$R_{\theta JA}$		63	

¹Pulse width limited by maximum junction temperature.

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

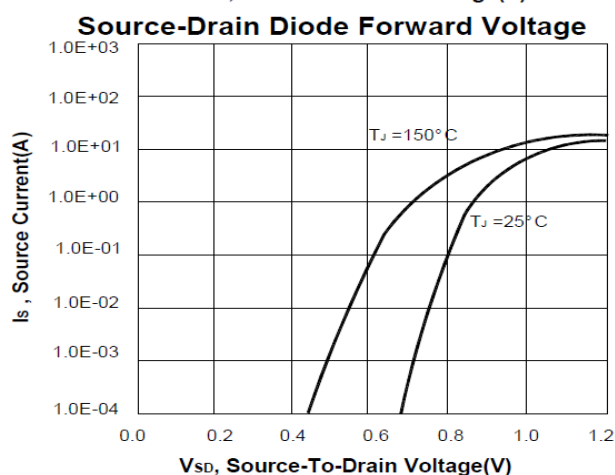
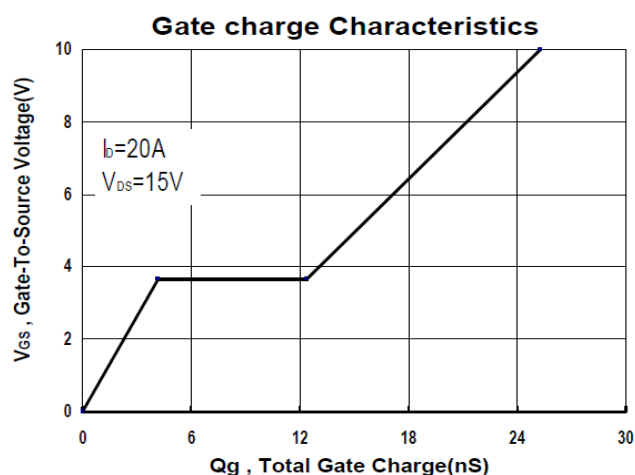
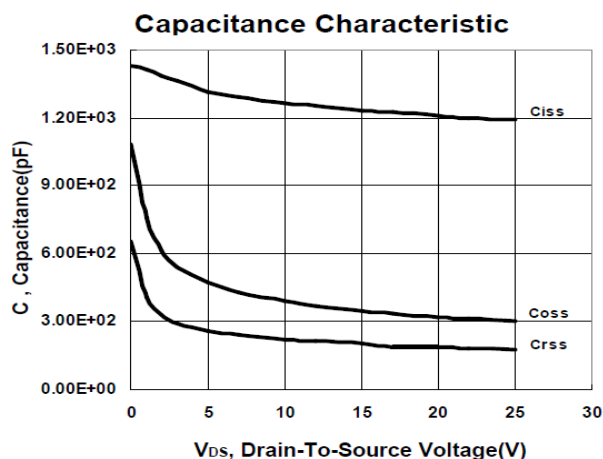
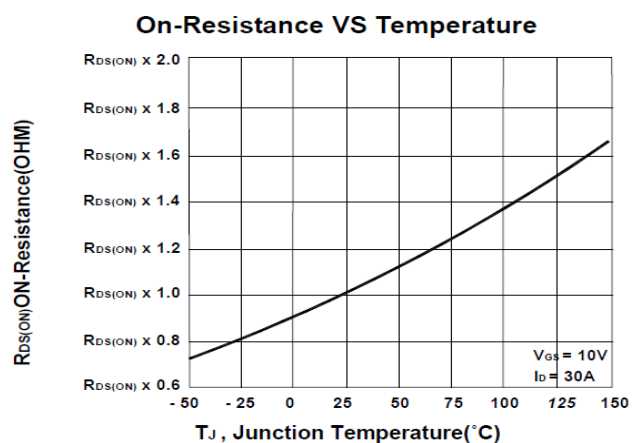
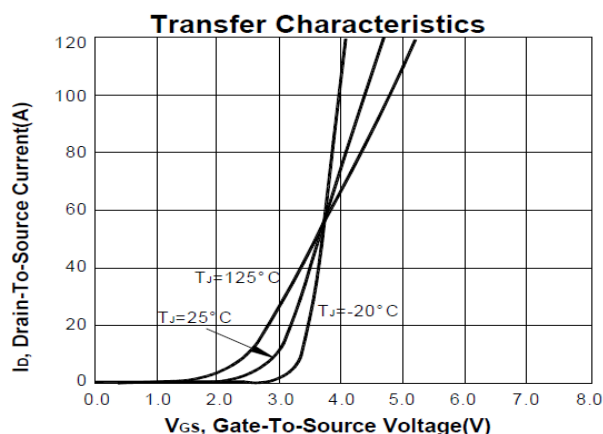
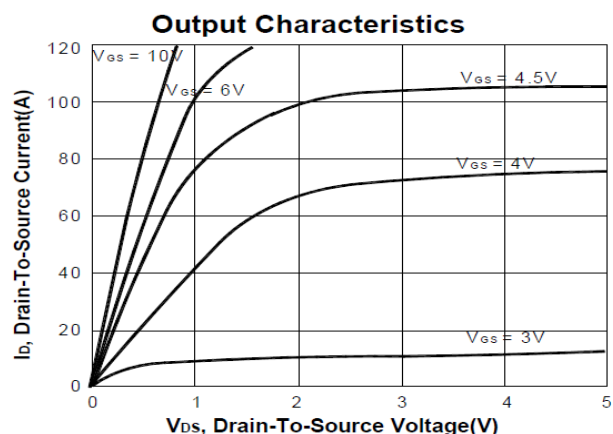
PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.7	3.0	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 125^{\circ}C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 15A$		9.6	11.8	m Ω
		$V_{GS} = 10V, I_D = 20A$		6	7.5	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 15V, I_D = 20A$		19		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$		1210		pF
Output Capacitance	C_{oss}			306		
Reverse Transfer Capacitance	C_{rss}			182		
Gate Resistance	R_g	$V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$		1.45		Ω
Total Gate Charge ²	Q_g	$V_{GS} = 10V$	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V, I_D = 20A$	26.3		nC
		$V_{GS} = 4.5V$		14.5		
Gate-Source Charge ²	Q_{gs}	4.3				
Gate-Drain Charge ²	Q_{gd}	9				
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 15V, I_D \cong 10A, V_{GS} = 10V, R_{GEN} = 6\Omega$		18		nS
Rise Time ²	t_r			10		
Turn-Off Delay Time ²	$t_{d(off)}$		35			
Fall Time ²	t_f		10			
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^{\circ}C$)						
Continuous Current	I_S				30	A
Forward Voltage ¹	V_{SD}	$I_F = 20A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 20A, dI_F/dt = 100A/\mu s$		22.6		nS
Reverse Recovery Charge	Q_{rr}			11		nC

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

²Independent of operating temperature.

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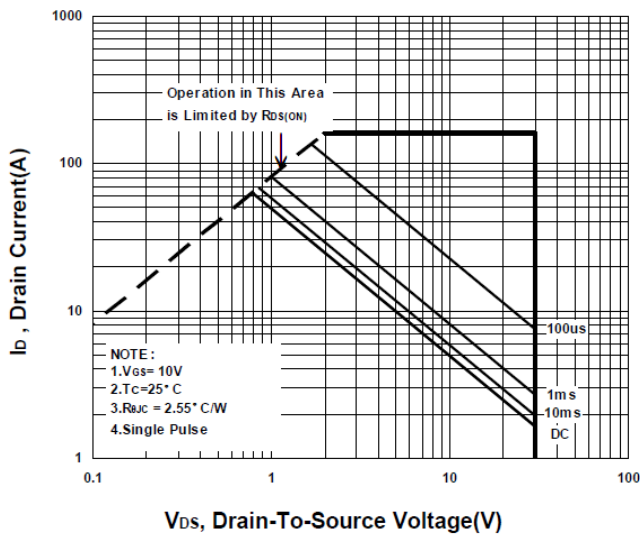
N-Channel Enhancement Mode MOSFET



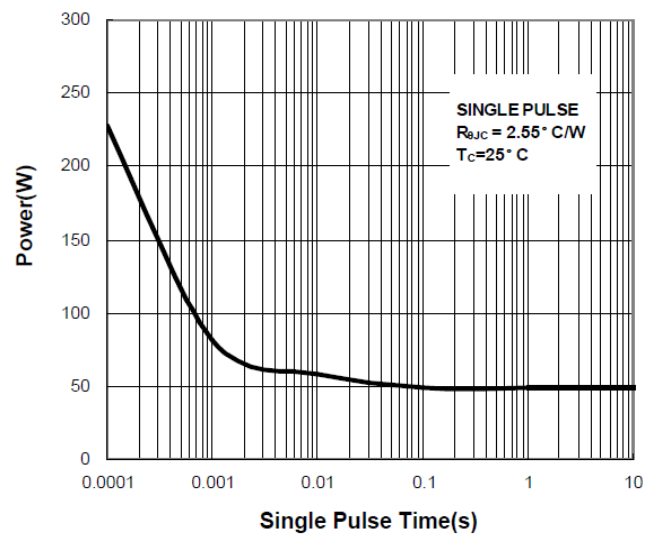
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N-Channel Enhancement Mode MOSFET

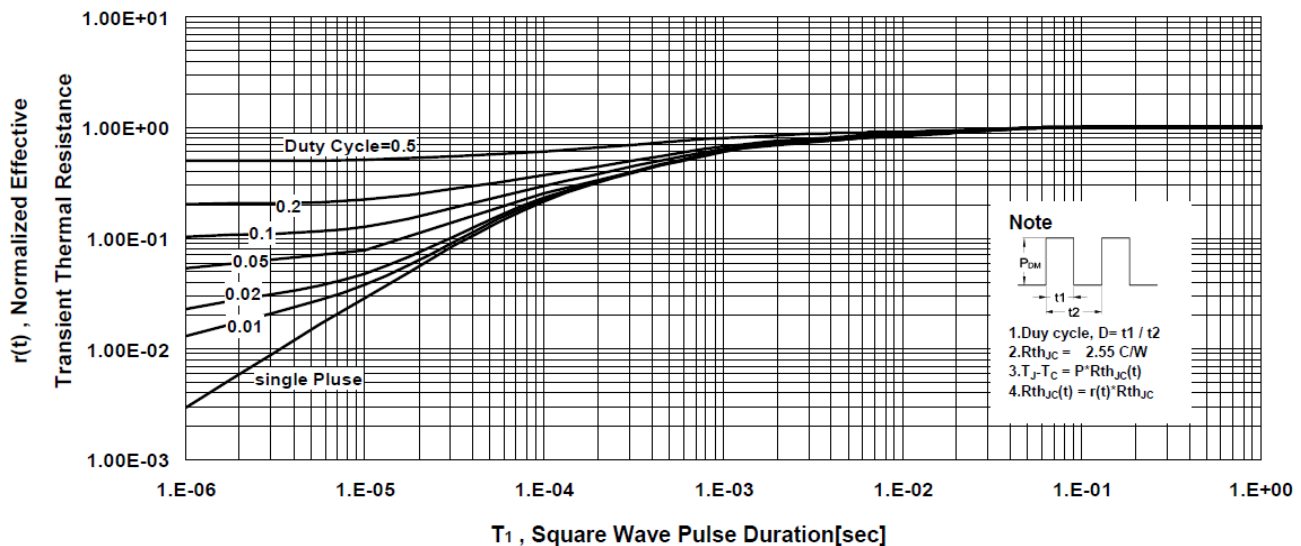
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



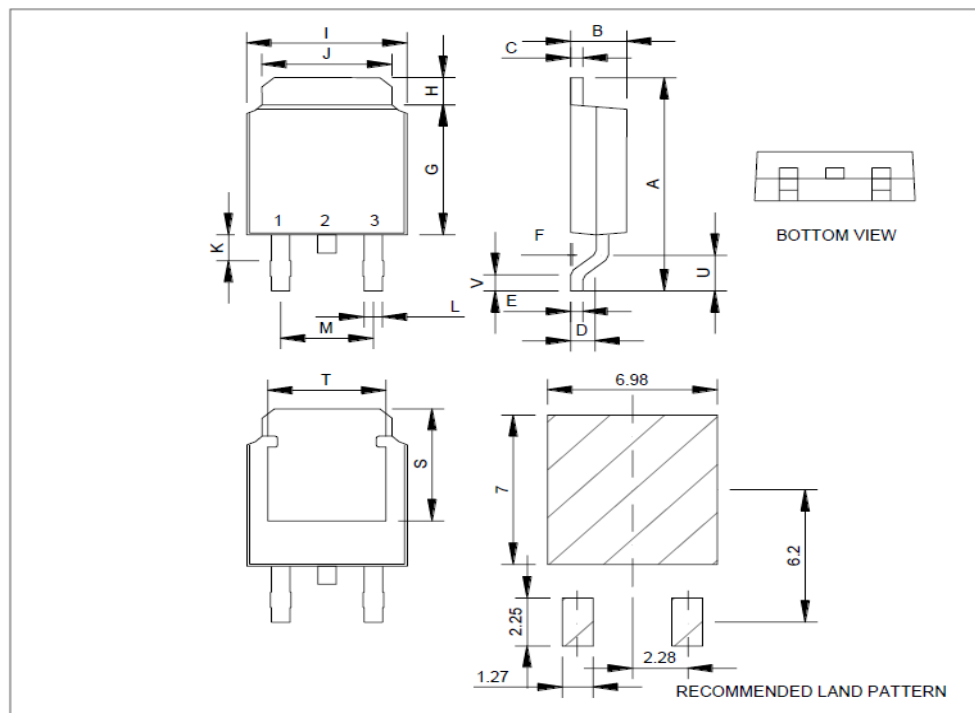
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N-Channel Enhancement Mode MOSFET

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。