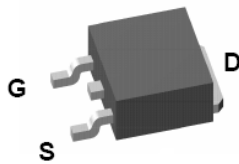


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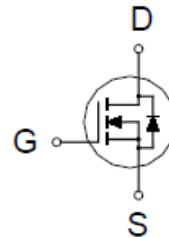
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
500V	1.5Ω @ $V_{GS} = 10V$	5A



TO-252



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	500	V
Gate-Source Voltage		V_{GS}	±30	
Continuous Drain Current ²	$T_C = 25\text{ °C}$	I_D	5	A
	$T_C = 100\text{ °C}$		3	
Pulsed Drain Current ^{1, 2}		I_{DM}	15	
Avalanche Current		I_{AS}	5	
Avalanche Energy	$L = 10\text{mH}$	E_{AS}	128	mJ
Power Dissipation	$T_C = 25\text{ °C}$	P_D	89	W
	$T_C = 100\text{ °C}$		36	
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		1.4	°C / W
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

²Limited only by maximum temperature allowed

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PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	500			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.5		4.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 30V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 500V, V_{GS} = 0V, T_C = 25^\circ C$			25	μA
		$V_{DS} = 500V, V_{GS} = 0V, T_C = 100^\circ C$			250	
Drain-Source On-State	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 2.5A$		1.35	1.5	Ω
Forward Transconductance ¹	g_{fs}	$V_{DS} = 10V, I_D = 2.5A$		4		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		691		pF
Output Capacitance	C_{oss}			93		
Reverse Transfer Capacitance	C_{rss}			12		
Total Gate Charge ²	Q_g	$V_{DD} = 250V, I_D = 2.5A, V_{GS} = 10V$		12.1		nC
Gate-Source Charge ²	Q_{gs}			3.7		
Gate-Drain Charge ²	Q_{gd}			3.6		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 250V, I_D = 2.5A, R_G = 25\Omega$		13		nS
Rise Time ²	t_r			22		
Turn-Off Delay Time ²	$t_{d(off)}$			28		
Fall Time ²	t_f			20		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)						
Continuous Current ³	I_S				5	A
Forward Voltage ¹	V_{SD}	$I_F = 5A, V_{GS} = 0V$			1.5	V
Reverse Recovery Time	t_{rr}	$I_F = 5A, di_F/dt = 100A / \mu s$		1450		nS
Reverse Recovery Charge	Q_{rr}				10	

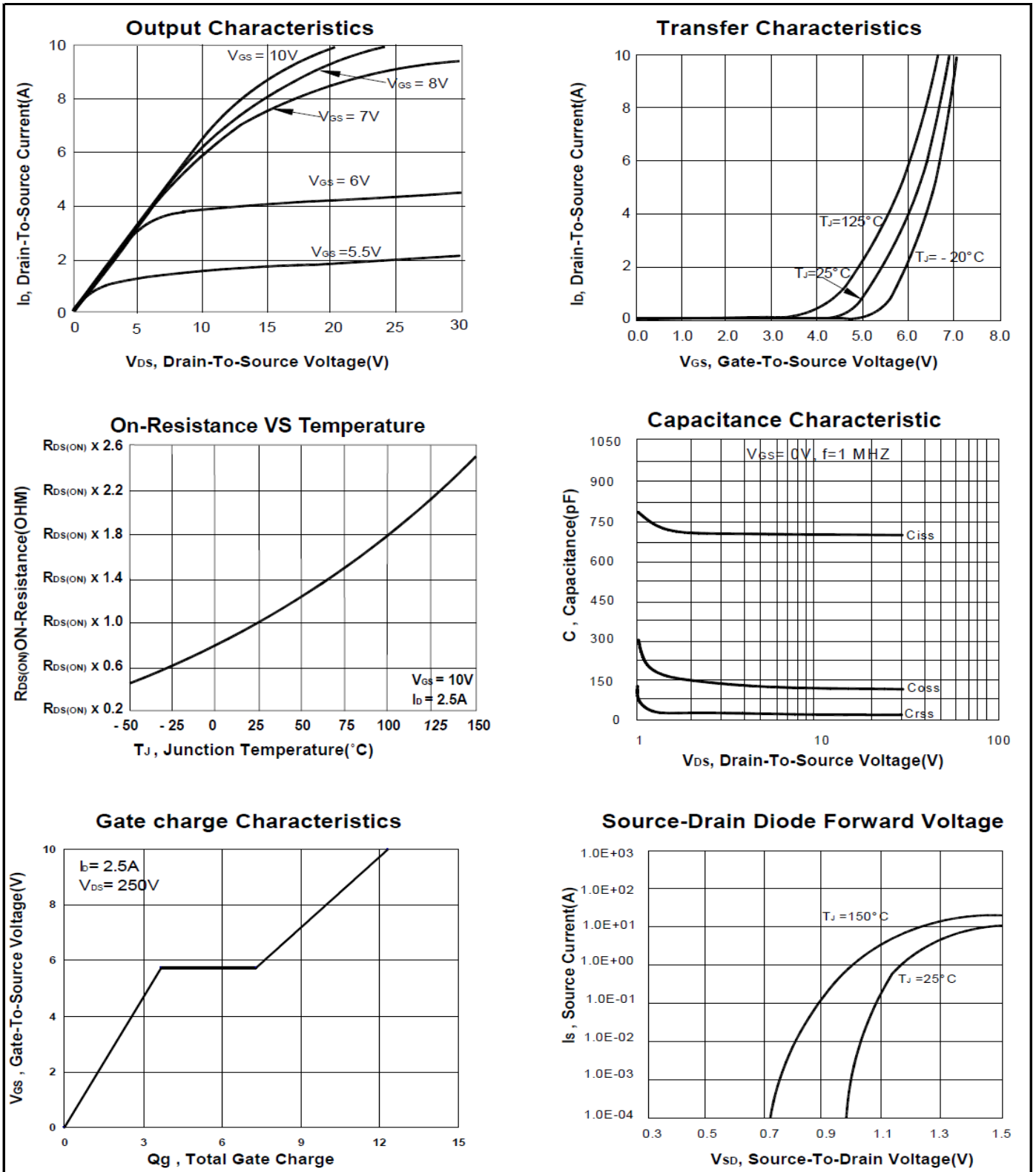
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

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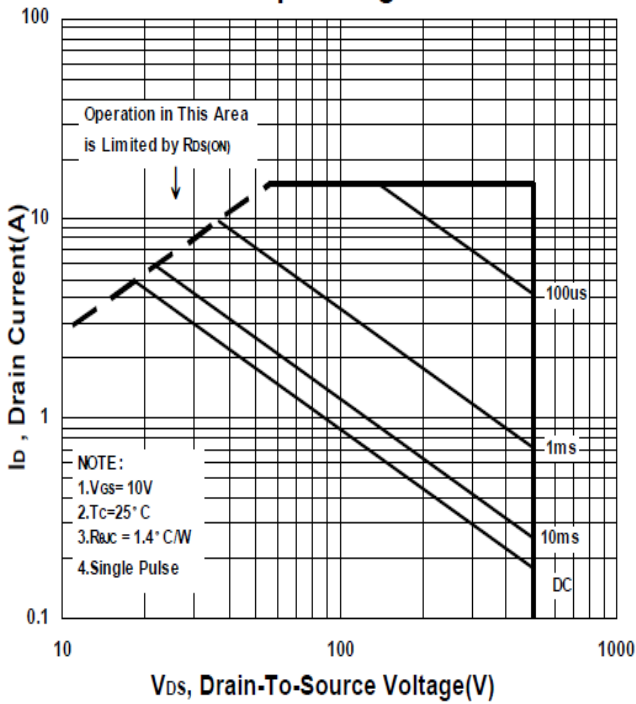
N-Channel Enhancement Mode MOSFET



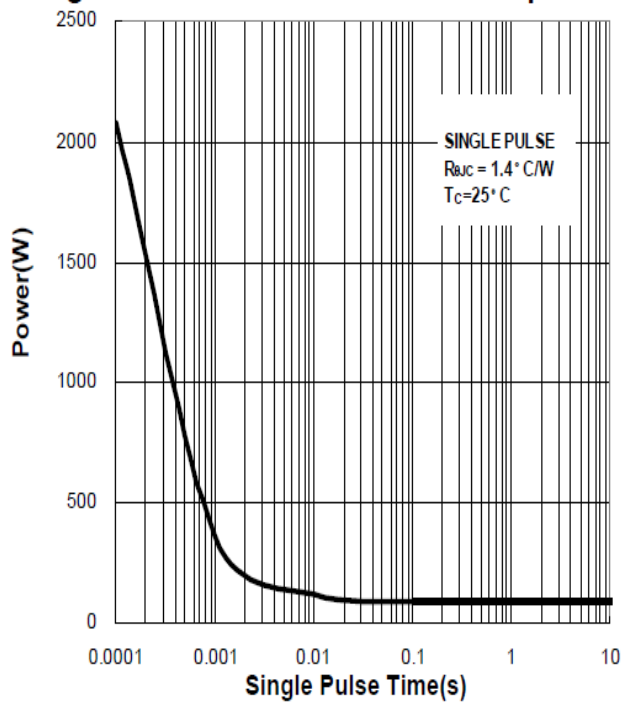
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N-Channel Enhancement Mode MOSFET

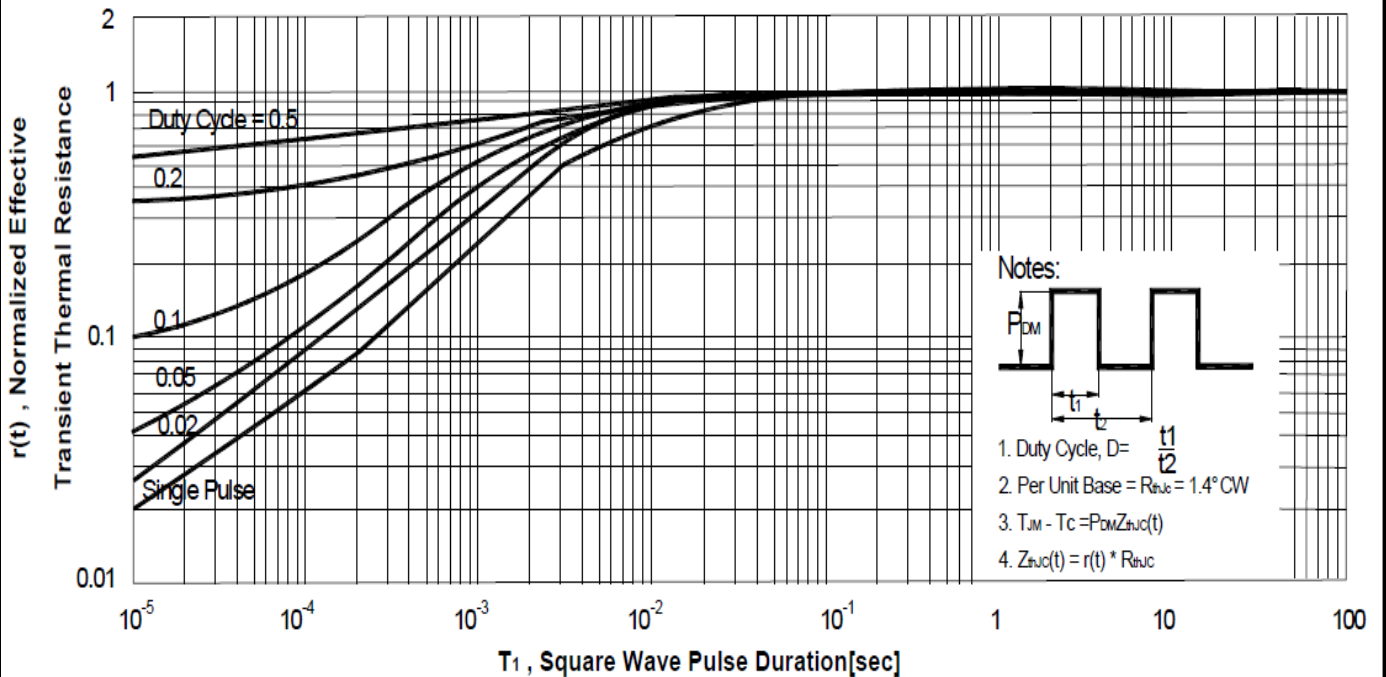
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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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				

