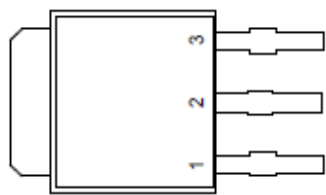


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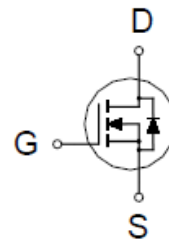
PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
600V	$2.3\Omega @ V_{GS} = 10V$	4A



TO-251(S)

- 1.GATE
- 2.DRAIN
- 3.SOURCE



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	600	V
Gate-Source Voltage		V_{GS}	± 30	
Continuous Drain Current ²	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	4	A
	$T_C = 100\text{ }^{\circ}\text{C}$		2.5	
Pulsed Drain Current ^{1,2}		I_{DM}	20	
Avalanche Current ³		I_{AS}	4	
Avalanche Energy ³		E_{AS}	80	mJ
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	62.5	W
	$T_C = 100\text{ }^{\circ}\text{C}$		25	
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	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		62.5	

¹Pulse width limited by maximum junction temperature.

²Limited only by maximum temperature allowed

³ $V_{DD} = 50V$, $L = 10mH$, starting $T_J = 25\text{ }^{\circ}\text{C}$

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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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	600			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	3.2	4	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 30V$			± 100	nA
Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 600V, V_{GS} = 0V, T_C = 25^\circ C$			1	μA
		$V_{DS} = 480V, V_{GS} = 0V, T_C = 100^\circ$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 2A$		1.85	2.3	Ω
Forward Transconductance ¹	g_{fs}	$V_{DS} = 15V, I_D = 2A$		5.8		S
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		517		pF
Output Capacitance	C_{oss}			62		
Reverse Transfer Capacitance	C_{rss}			11		
Total Gate Charge ²	Q_g	$V_{DD} = 480V, I_D = 4A, V_{GS} = 10V$		18		nC
Gate-Source Charge ²	Q_{gs}			2.8		
Gate-Drain Charge ²	Q_{gd}			8.3		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 300V, I_D = 4A,$ $V_{GS} = 10V, R_G = 25\Omega$		18		nS
Rise Time ²	t_r			46		
Turn-Off Delay Time ²	$t_{d(off)}$			46		
Fall Time ²	t_f			50		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25^\circ C$)						
Continuous Current ³	I_S				4	A
Forward Voltage ¹	V_{SD}	$I_F = 4A, V_{GS} = 0V$			1.5	V
Reverse Recovery Time	t_{rr}	$I_F = 4A, dI_F/dt = 100A / \mu S$		383		nS
Reverse Recovery Charge	Q_{rr}			2.2		uC

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

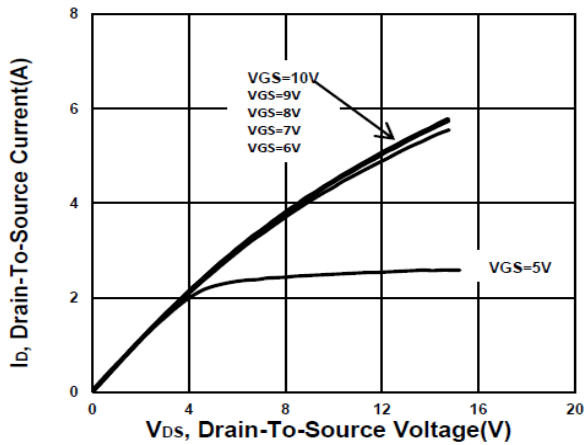
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

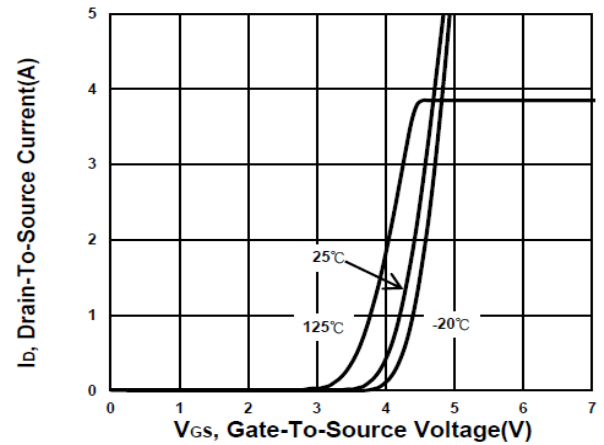
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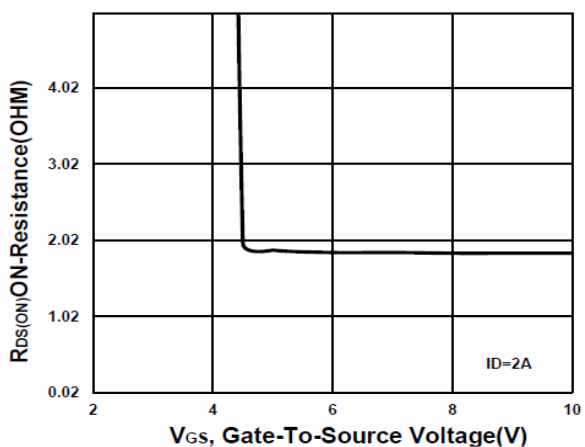
Output Characteristics



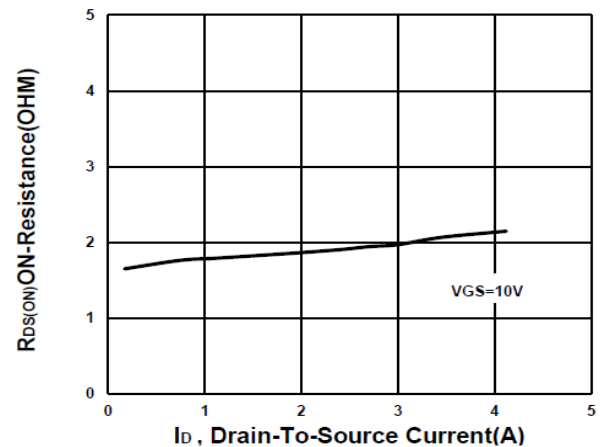
Transfer Characteristics



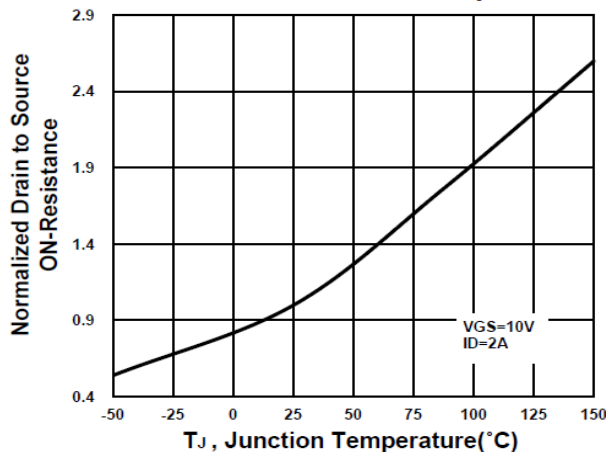
On-Resistance VS Gate-To-Source



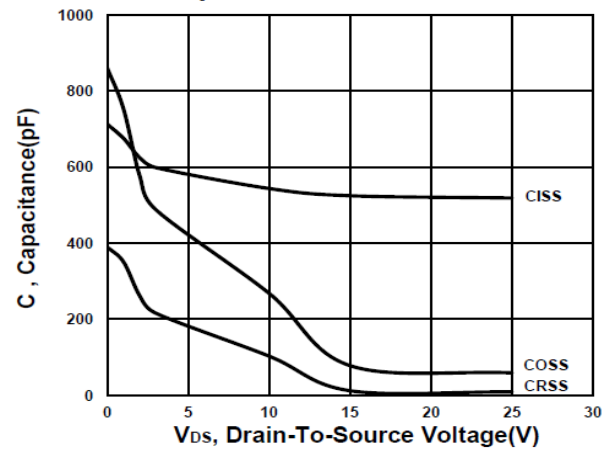
On-Resistance VS Drain Current



On-Resistance VS Temperature



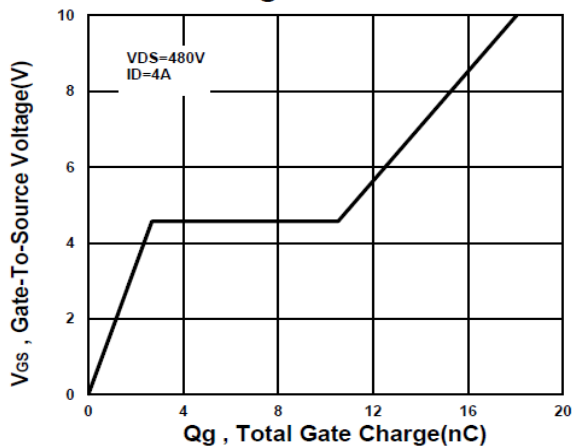
Capacitance Characteristic



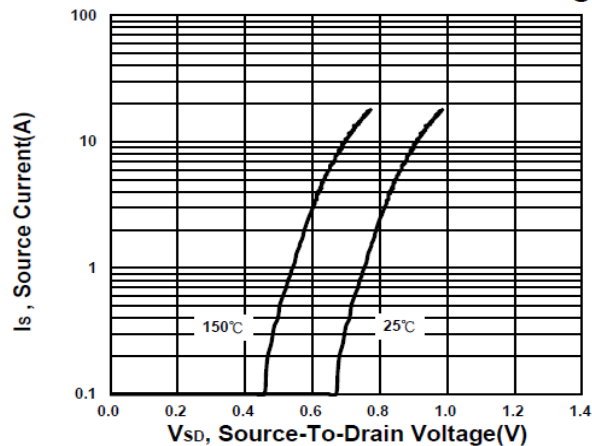
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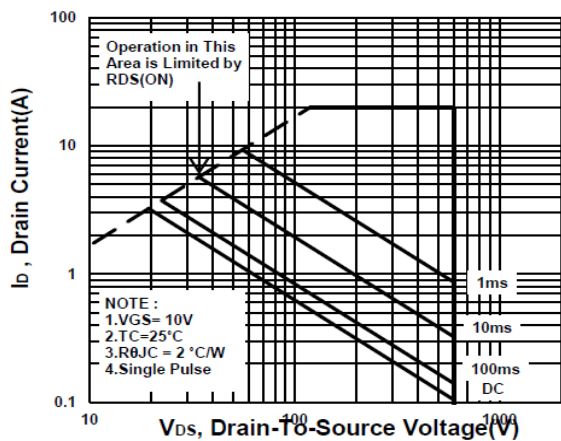
Gate charge Characteristics



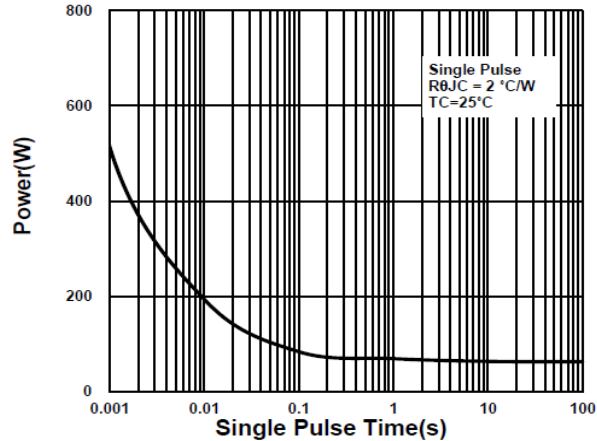
Source-Drain Diode Forward Voltage



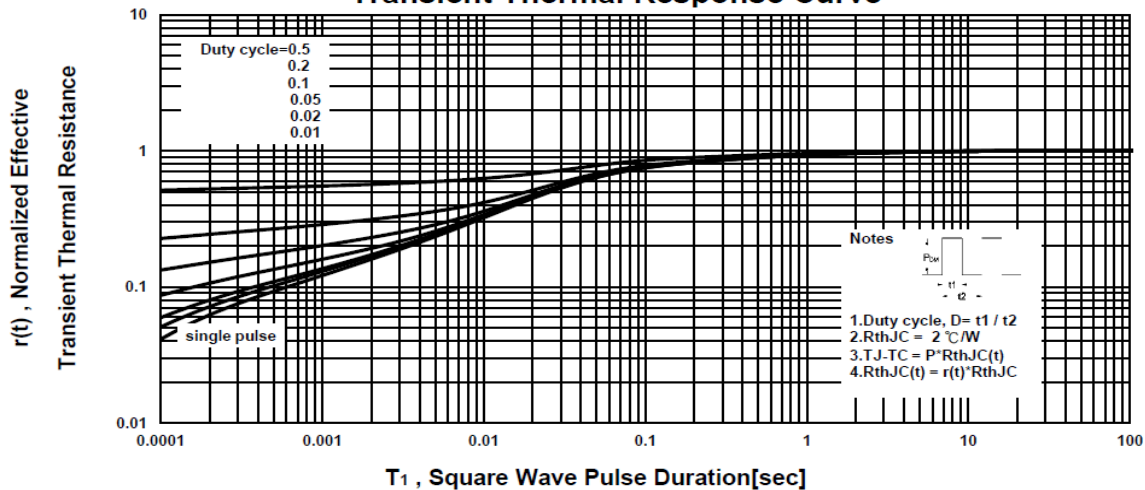
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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Package Dimension

TO-251 (IS) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	6.3	6.6	6.8	H	2.1	2.3	2.5
B	4.8	5.3	5.5	J	0.4	0.5	0.6
C	6.7		7.57	K	0.35	0.5	0.65
D	3	3.5	4.5	L	0.9		1.5
E		2.3		M	5.3		6.22
F	0.6	0.9	1.1	N	1.4	1.6	2.1
G	0.4		0.89				

