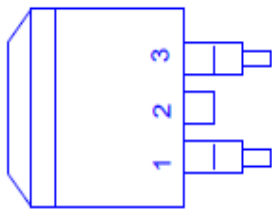


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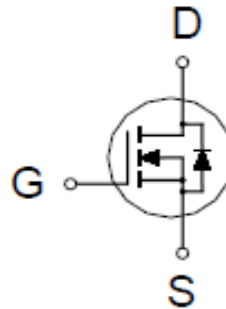
PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
650V	2.6m Ω @ $V_{GS} = 10V$	4A



TO-263

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}	650	V
Gate-Source Voltage		V_{GS}	± 30	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	4	A
	$T_C = 100\text{ }^\circ\text{C}$		2.5	
Pulsed Drain Current ¹		I_{DM}	15	
Avalanche Current ²		I_{AS}	2	
Avalanche Energy ²		E_{AS}	20	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	71	W
	$T_C = 100\text{ }^\circ\text{C}$		28	
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	$R_{\theta JC}$		1.75	$^\circ\text{C} / \text{W}$

¹ Pulse width limited by maximum junction temperature.

² $V_{DD} = 50V$, $L = 10mH$, 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 = 250μA	650			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2.5	3.3	4.5	V
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±30V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 650V, V _{GS} = 0V			1	μA
		V _{DS} = 520V, V _{GS} = 0V, T _J = 125°C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 10V, I _D = 2A		2.1	2.6	mΩ
Forward Transconductance ¹	g _{fs}	V _{DS} = 10V, I _D = 2A		2.7		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		527		pF
Output Capacitance	C _{oss}			49		
Reverse Transfer Capacitance	C _{rss}			12		
Total Gate Charge ²	Q _g	V _{GS} = 10V, V _{DS} = 520V, I _D = 4A		11		nC
Gate-Source Charge ²	Q _{gs}			3.3		
Gate-Drain Charge ²	Q _{gd}			4.4		
Turn-On Delay Time ²	t _{d(on)}	V _{DD} = 325V, I _D ≅ 4A, V _{GS} = 10V, R _{GS} = 6Ω		28		nS
Rise Time ²	t _r			60		
Turn-Off Delay Time ²	t _{d(off)}			91		
Fall Time ²	t _f			75		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				4	A
Forward Voltage ¹	V _{SD}	I _F = 4A, V _{GS} = 0V			1	V
Reverse Recovery Time	t _{rr}	I _F = 4A, dI _F /dt = 100A / μS		367		nS
Reverse Recovery Charge	Q _{rr}				2.1	

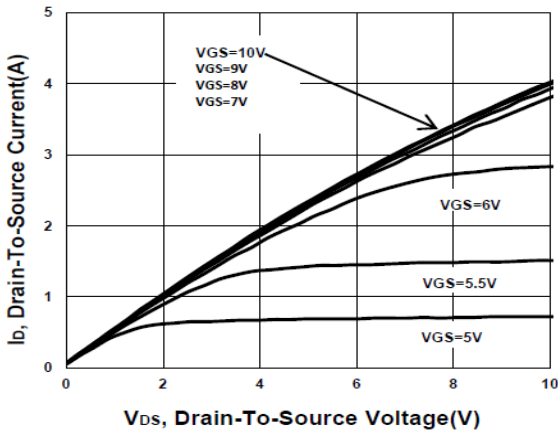
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

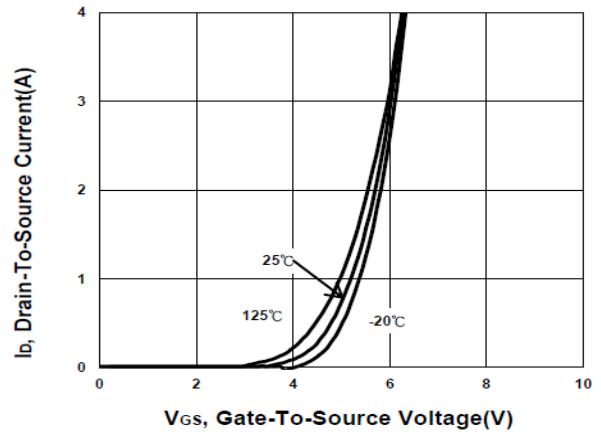
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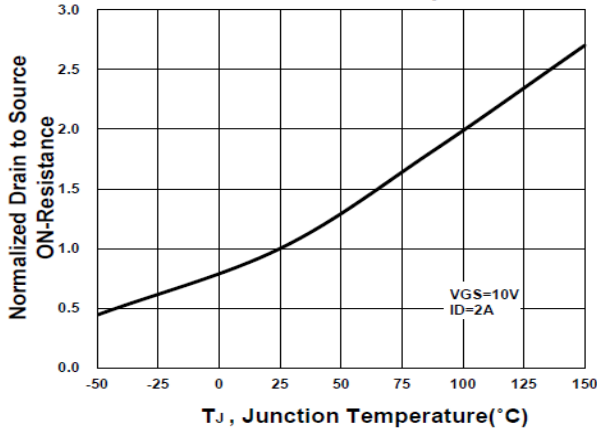
Output Characteristics



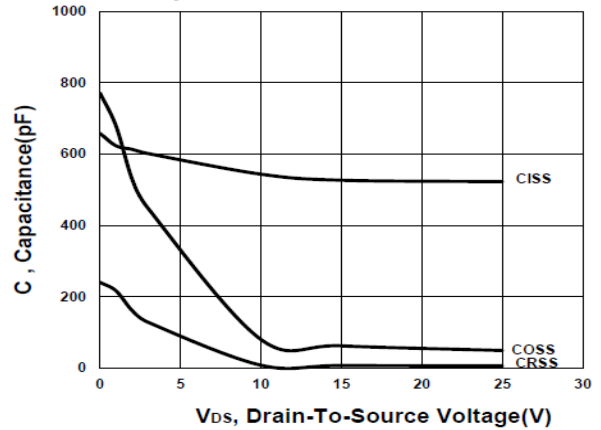
Transfer Characteristics



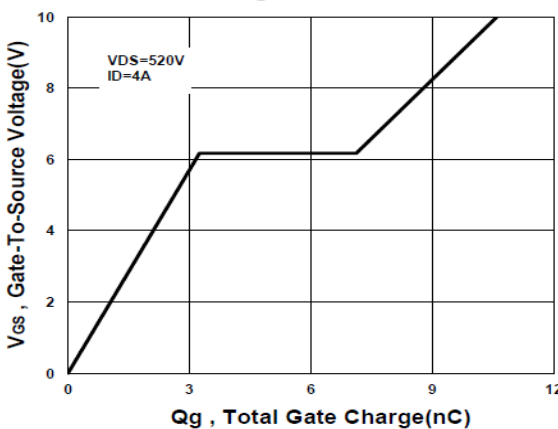
On-Resistance VS Temperature



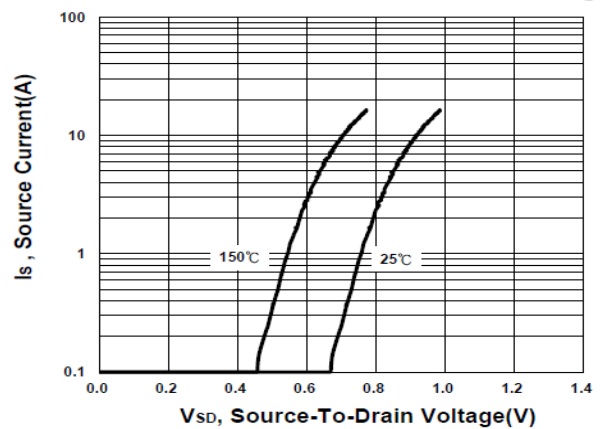
Capacitance Characteristic



Gate charge Characteristics



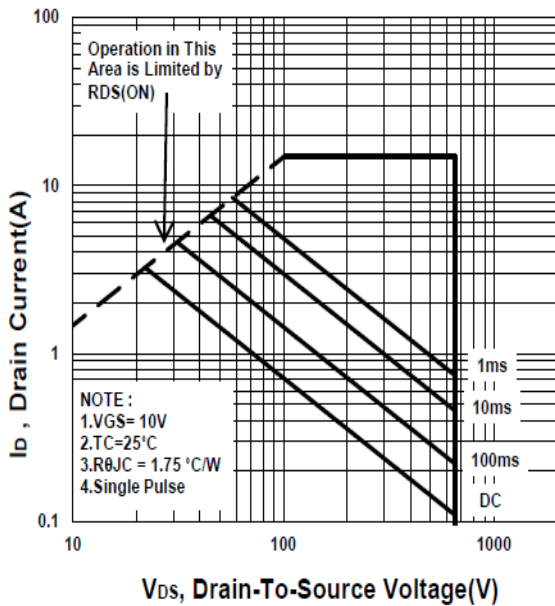
Source-Drain Diode Forward Voltage



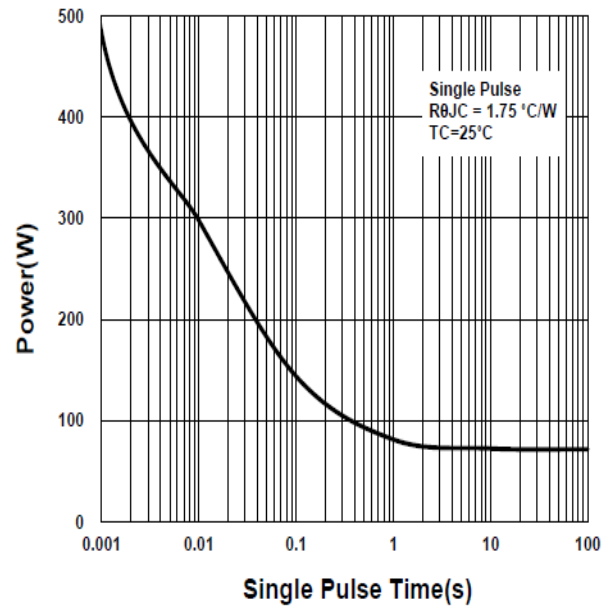
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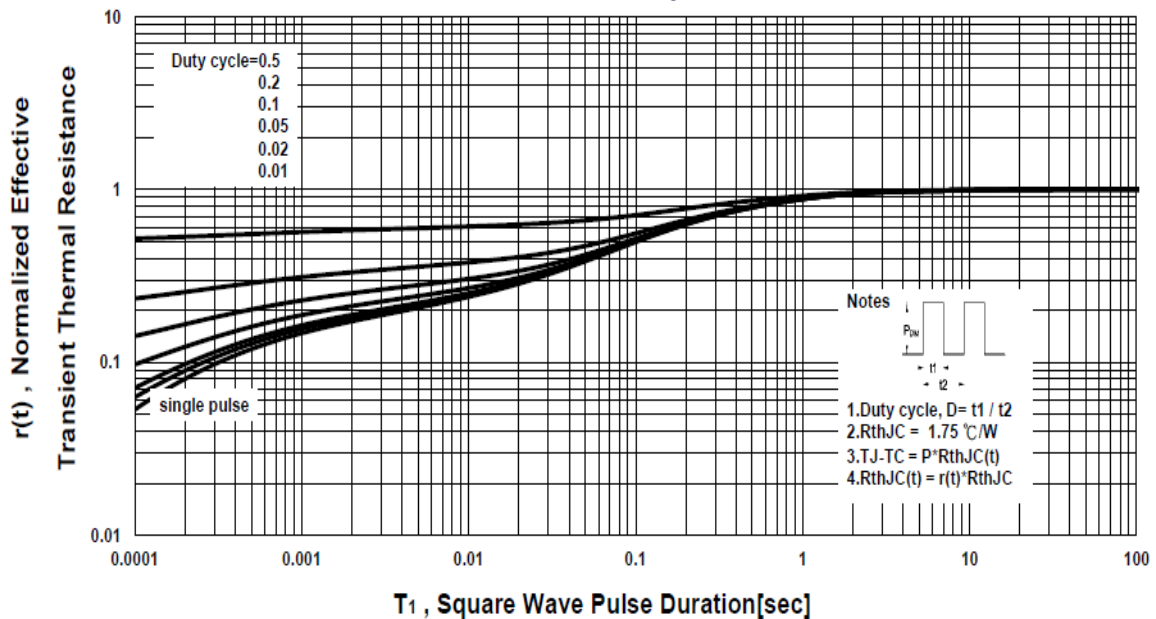
Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



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Package Dimension

TO-263 (D²PAK) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	4.2		4.8	e	4.08	5.08	6.08
A1	0		0.3	E	9.8		10.55
b	0.71		1.06	E1	6.9		8.7
b2	1.07		1.47	H	14.2		15.8
C	0.3		0.69	L	1.2		2.79
C2	1.15		1.45	L1	1		1.65
D	8.3		9.4	L2	1.2		1.78
D1	6.37		8.23				

