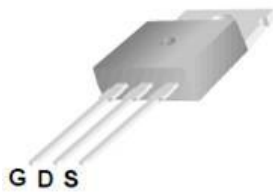


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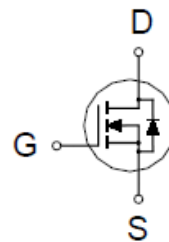
## N-Channel Enhancement Mode MOSFET

### PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	$I_D$
600V	$4.4\Omega @ V_{GS} = 10V$	2.8A



TO-220



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		$V_{GS}$	$\pm 30$	V
Continuous Drain Current <sup>2</sup>	$T_C = 25\text{ }^\circ\text{C}$	$I_D$	2.8	A
	$T_C = 100\text{ }^\circ\text{C}$		1.8	
Pulsed Drain Current <sup>1</sup>		$I_{DM}$	3.5	
Avalanche Energy		$E_{AS}$	5	mJ
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	$P_D$	96	W
	$T_C = 100\text{ }^\circ\text{C}$		38	
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	$R_{\theta JC}$		1.3	$^\circ\text{C} / \text{W}$

<sup>1</sup>Pulse width limited by maximum junction temperature.

<sup>2</sup>Limited only by maximum temperature allowed.

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

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## N-Channel Enhancement Mode MOSFET

### ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
<b>STATIC</b>						
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	600			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	2.5	3.5	4.5	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 600V, V <sub>GS</sub> = 0V			1	μA
		V <sub>DS</sub> = 480V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 125 °C			10	
Drain-Source On-State	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 1A		4.2	4.4	Ω
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	V <sub>DS</sub> = 10V, I <sub>D</sub> = 1A		1.4		S
<b>DYNAMIC</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0V, V <sub>DS</sub> = 25V, f = 1MHz		332		pF
Output Capacitance	C <sub>oss</sub>			28		
Reverse Transfer Capacitance	C <sub>rss</sub>			6		
Total Gate Charge <sup>2</sup>	Q <sub>g</sub>	V <sub>DS</sub> = 480V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 2A		11		nC
Gate-Source Charge <sup>2</sup>	Q <sub>gs</sub>			3		
Gate-Drain Charge <sup>2</sup>	Q <sub>gd</sub>			7		
Turn-On Delay Time <sup>2</sup>	t <sub>d(on)</sub>	V <sub>DS</sub> = 300V, I <sub>D</sub> ≅ 1A, V <sub>GS</sub> = 10V, R <sub>GEN</sub> = 6Ω		15		nS
Rise Time <sup>2</sup>	t <sub>r</sub>			45		
Turn-Off Delay Time <sup>2</sup>	t <sub>d(off)</sub>			35		
Fall Time <sup>2</sup>	t <sub>f</sub>			60		
<b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b>						
Continuous Current	I <sub>S</sub>				2.8	A
Forward Voltage <sup>1</sup>	V <sub>SD</sub>	I <sub>F</sub> = 1A, V <sub>GS</sub> = 0V			1.5	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 1A, di <sub>F</sub> /dt = 100A / μS		247		nS
Reverse Recovery Charge	Q <sub>rr</sub>				652	

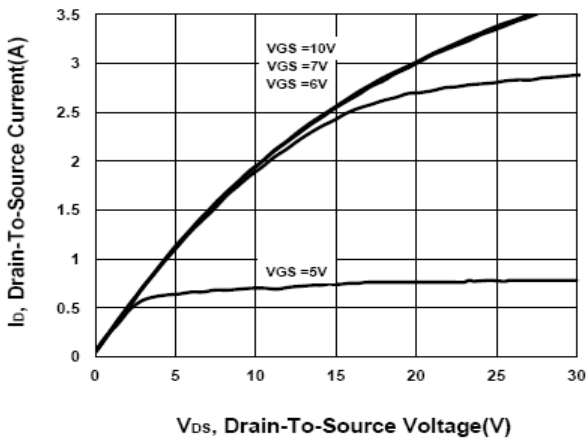
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

<sup>2</sup>Independent of operating temperature.

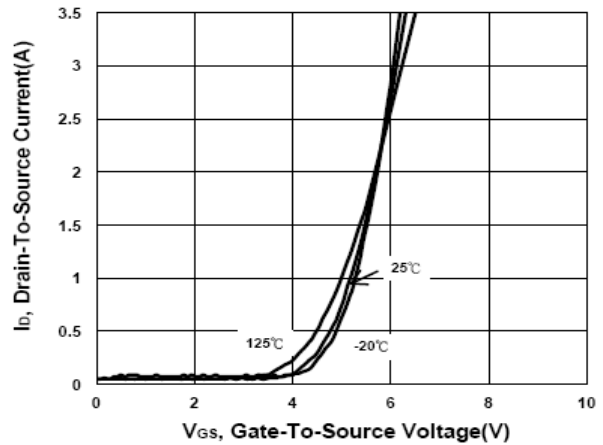
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## N-Channel Enhancement Mode MOSFET

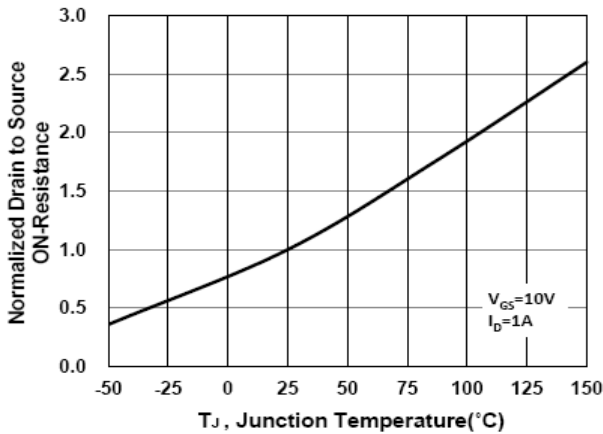
**Output Characteristics**



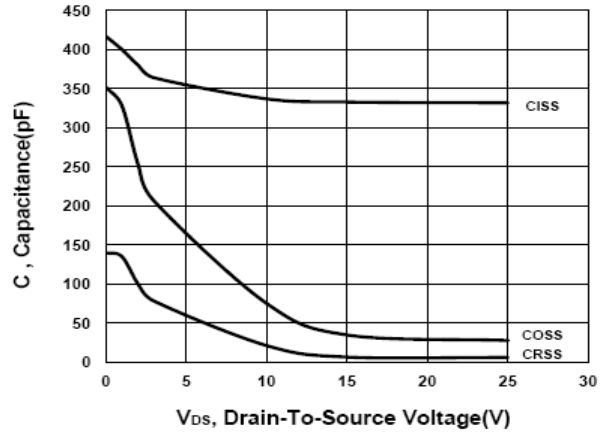
**Transfer Characteristics**



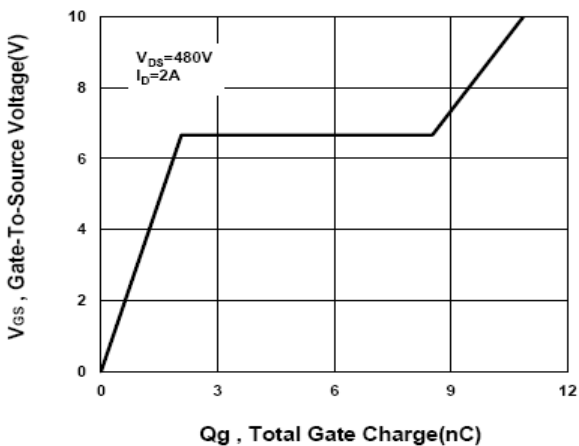
**On-Resistance VS Temperature**



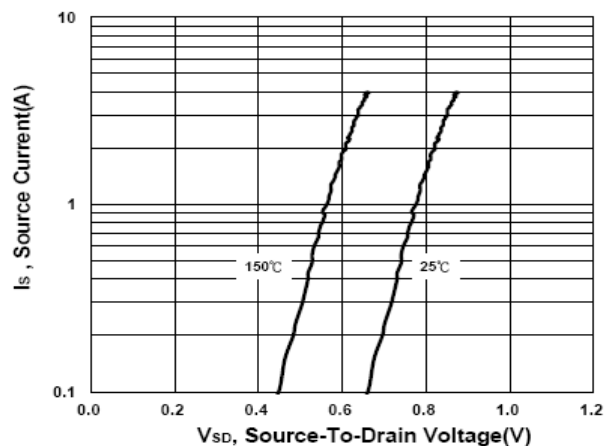
**Capacitance Characteristic**



**Gate charge Characteristics**



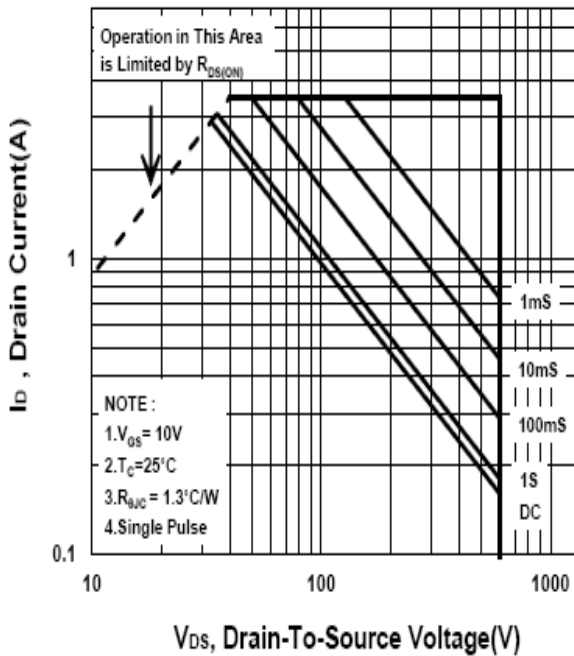
**Source-Drain Diode Forward Voltage**



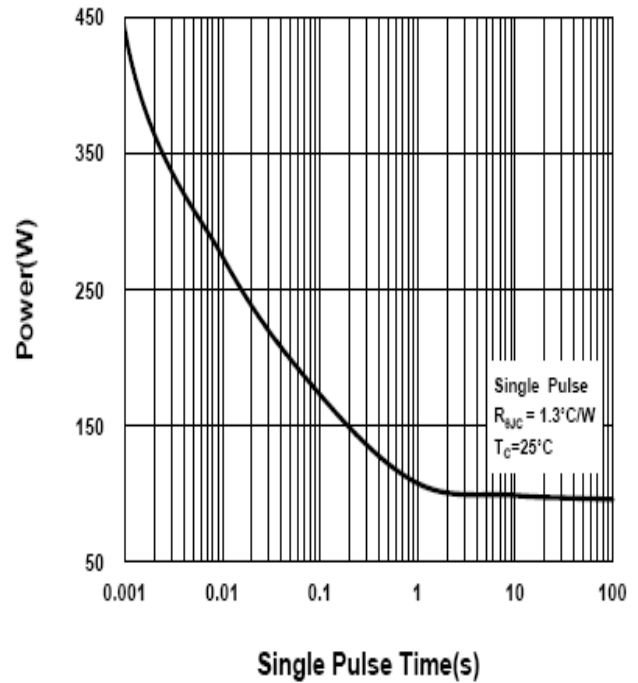
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## N-Channel Enhancement Mode MOSFET

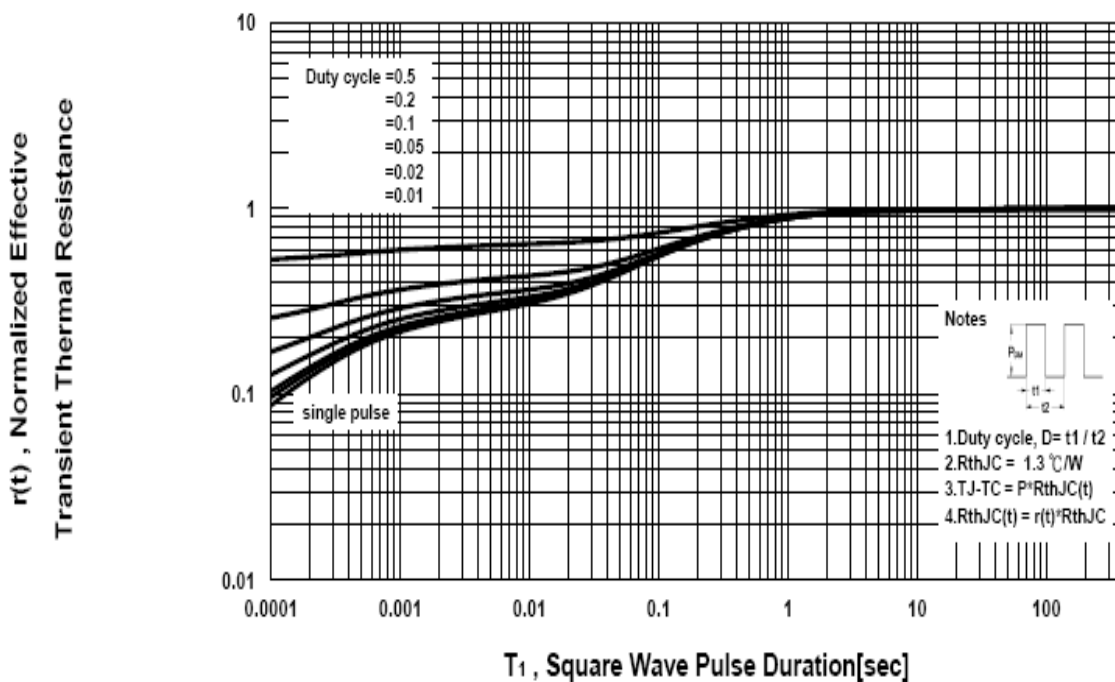
### Safe Operating Area



### Single Pulse Maximum Power Dissipation



### Transient Thermal Response Curve



# P0260AT

## N-Channel Enhancement Mode MOSFET

### Package Dimension

### TO-220 (3-Lead) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	9.652	10.16	11.5	H	2.04	2.54	3.04
B	2.54	2.79	3.048	I	1.15	1.52	1.778
C	17.3		22.86	J	3.556	4.57	4.826
D	26.924	29.03	31.242	K	0.508	1.3	1.45
E	14.224	15.45	16.510	L	1.89	2.69	3.09
F	8.382	9.20	9.40	M	0.34	0.5	0.6
G	0.381	0.81	1.016	N			

