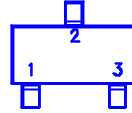
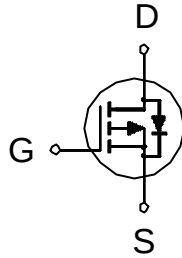


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
-20	150m Ω	-3A



1 : GATE
2 : DRAIN
3 : SOURCE

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	-3	A
	$T_C = 70\text{ }^{\circ}\text{C}$		-1.4	
Pulsed Drain Current ¹		I_{DM}	-10	
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	1.25	W
	$T_C = 70\text{ }^{\circ}\text{C}$		0.8	
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-Ambient	$R_{\theta JA}$		166	$^{\circ}\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.5	-0.9	-1.2	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 12V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16V, V_{GS} = 0V$			-1	μA
		$V_{DS} = -16V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			-10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = -5V, V_{GS} = -4.5V$	-6			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -2A$		100	150	mΩ
		$V_{GS} = -2.5V, I_D = -1A$		180	250	

Forward Transconductance ¹	g _{fs}	V _{DS} = -5V, I _D = -2A		16		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -6V, f = 1MHz		410		pF
Output Capacitance	C _{oss}			220		
Reverse Transfer Capacitance	C _{rss}			85		
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = -4.5V, I _D = -2A		5.8	10	nC
Gate-Source Charge ²	Q _{gs}			0.85		
Gate-Drain Charge ²	Q _{gd}			1.70		
Turn-On Delay Time ²	t _{d(on)}	V _{DD} = -10V I _D ≅ -1A, V _{GS} = -4.5V, R _G = 6Ω		13		nS
Rise Time ²	t _r			36		
Turn-Off Delay Time ²	t _{d(off)}			42		
Fall Time ²	t _f			34		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _C = 25 °C)						
Continuous Current	I _S				-1.6	A
Pulsed Current ³	I _{SM}				-3	
Forward Voltage ¹	V _{SD}	I _F = -1A, V _{GS} = 0V			-1.2	V

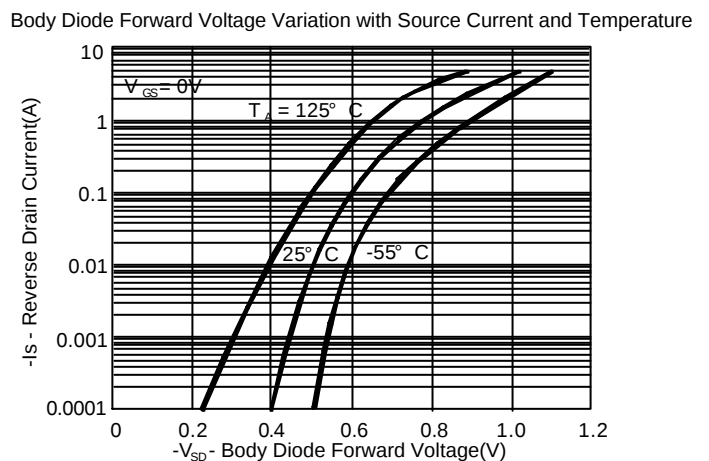
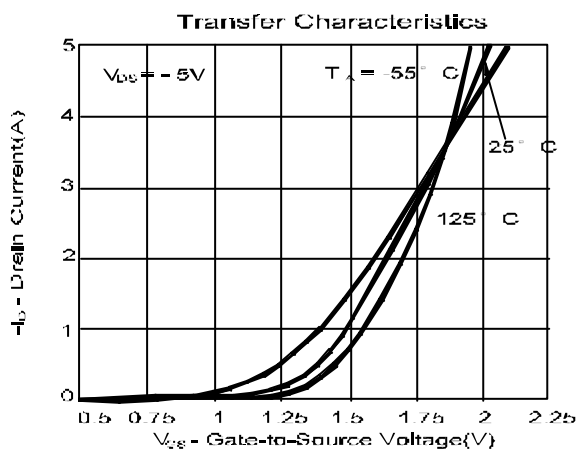
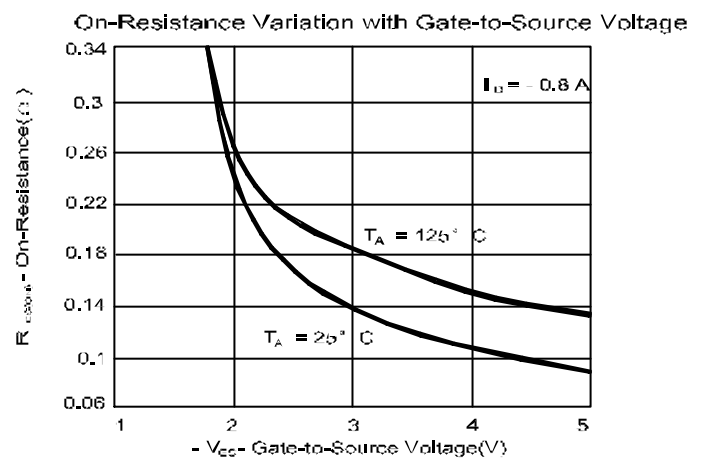
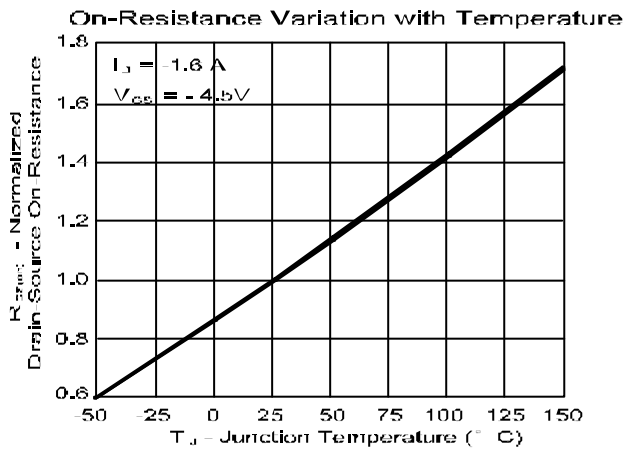
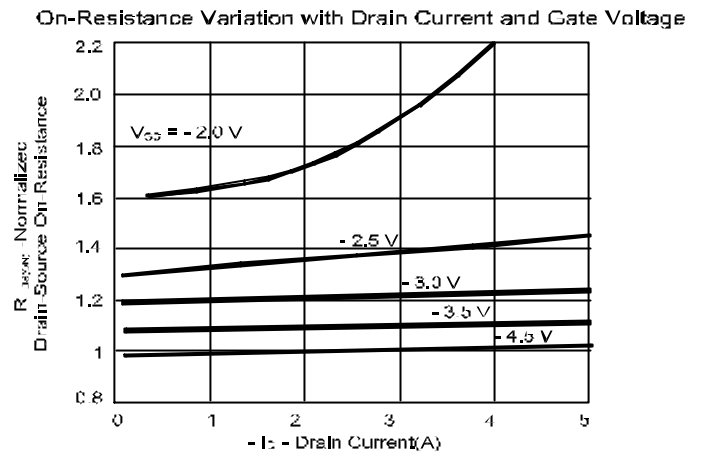
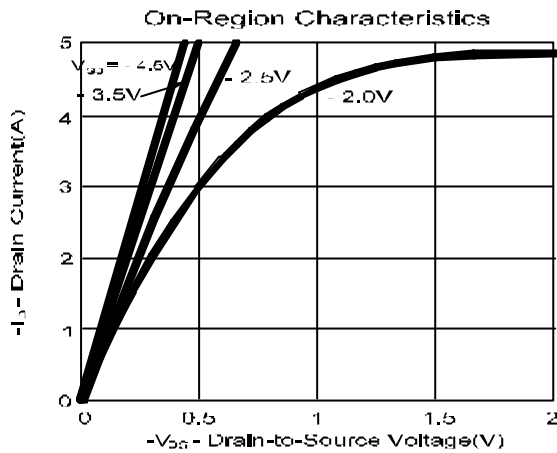
¹Pulse test : Pulse Width $\leq 300 \mu sec$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

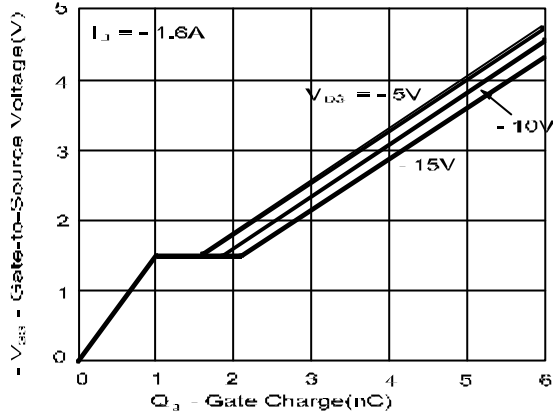
³Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH “20YWW”, DATE CODE or LOT #

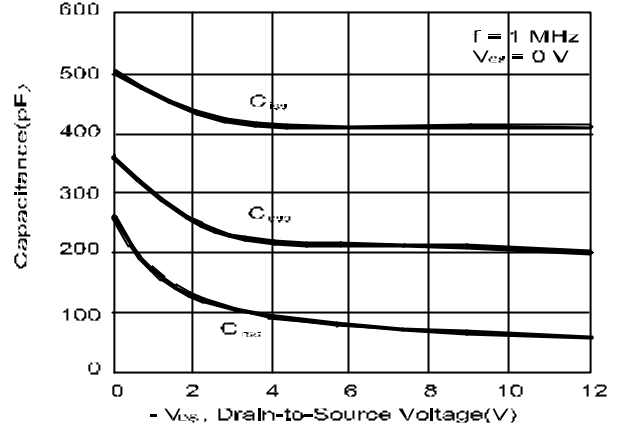
Orders for parts with Lead-Free plating can be placed using the PXXXXXXG parts name.



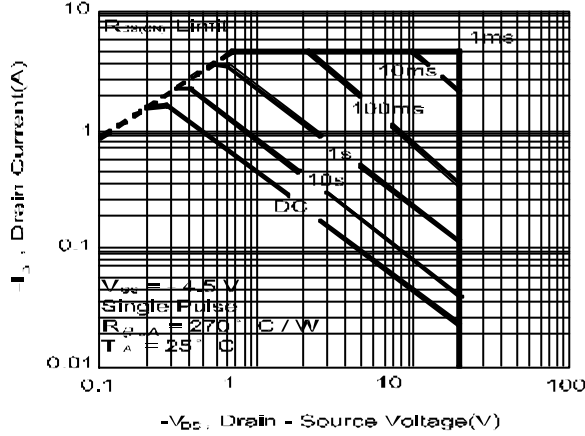
Gate Charge Characteristics



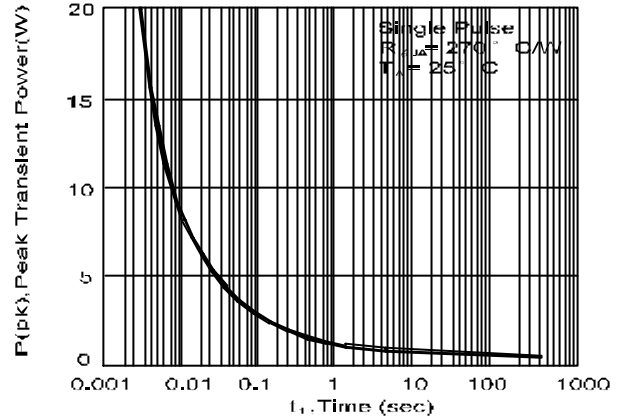
Capacitance Characteristics



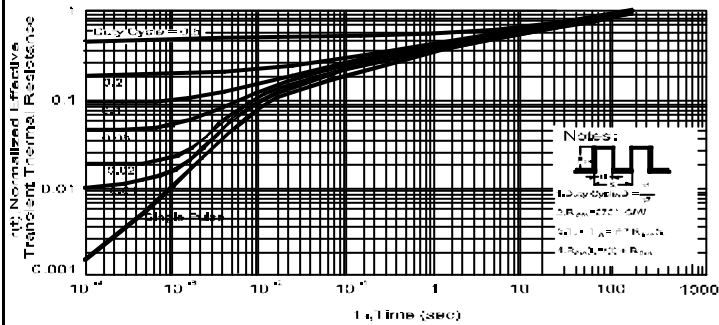
Maximum Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



SOT-23 (M3) MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.85		1.15	H	0.1	0.15	0.25
B	2.4		3	I	0.37		
C	1.4	1.6	1.8	J			
D	2.7	2.9	3.1	K			
E	1	1.1	1.3	L			
F	0		0.1	M			
G	0.35		0.5	N			

