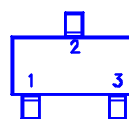
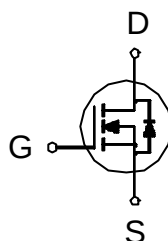


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
20	50.8m 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
Gate-Source Voltage		V_{GS}	± 16	V
Continuous Drain Current	$T_C = 25\text{ }^{\circ}\text{C}$	I_D	3	A
	$T_C = 100\text{ }^{\circ}\text{C}$		2	
Pulsed Drain Current ¹		I_{DM}	20	
Power Dissipation	$T_C = 25\text{ }^{\circ}\text{C}$	P_D	0.6	W
	$T_C = 100\text{ }^{\circ}\text{C}$		0.5	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^{\circ}\text{C}$
Lead Temperature (t_{16}'' from case for 10 sec.)		T_L	275	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		65	$^{\circ}\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		230	

¹Pulse width limited by maximum junction temperature.²Duty cycle $\leq 1\%$ ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$, Unless Otherwise Noted)

ELECTRICAL CHARACTERISTICS (T _J = 25 °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 = 250μA	20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.45	0.75	1.2	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±16V			±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 °C			10	
On-State Drain Current ¹	I _{D(ON)}	V _{DS} = 10V, V _{GS} = 4.5V	6			A
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 2.5V, I _D = 1.5A		60	100	m Ω
		V _{GS} = 4.5V, I _D = 3A		42	50.8	

DYNAMIC						
Input Capacitance	C _{iSS}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		450		pF
Output Capacitance	C _{oSS}			100		
Reverse Transfer Capacitance	C _{rSS}			60		
Total Gate Charge ²	Q _g	V _{DS} = 0.5V _{(BR)DSS} , V _{GS} = 4.5V, I _D = 3A		12	25	nC
Gate-Source Charge ²	Q _{gs}			3		
Gate-Drain Charge ²	Q _{gd}			4.5		
Turn-On Delay Time ²	t _{d(on)}	V _{DD} = 10V, R _L = 1Ω I _D ≅ 1A, V _{GEN} = 4.5V, R _{GS} = 0.2Ω		6	12	nS
Rise Time ²	t _r			5	10	
Turn-Off Delay Time ²	t _{d(off)}			16	40	
Fall Time ²	t _f			5	20	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _C = 25 °C)						
Continuous Current	I _S				2.3	A
Pulsed Current ³	I _{SM}				4.6	
Forward Voltage ¹	V _{SD}	I _F = I _S , V _{GS} = 0V			1.3	V

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

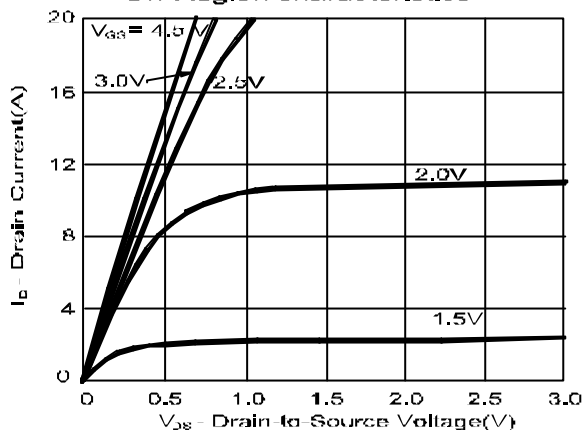
²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

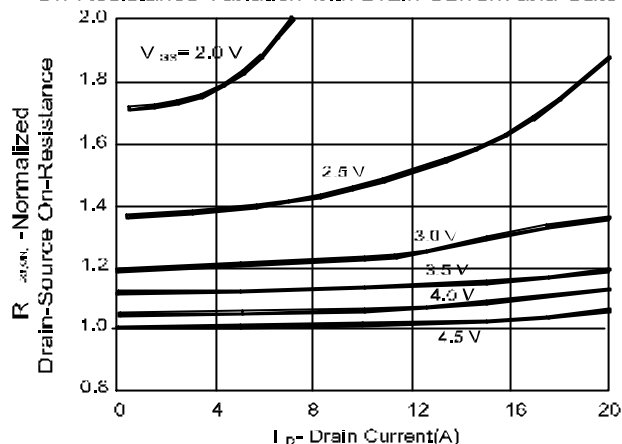
REMARK: THE PRODUCT MARKED WITH “12YWW”, DATE CODE or LOT #

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

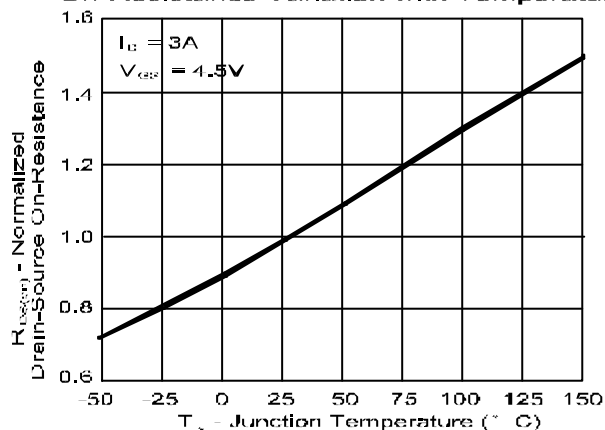
On-Region characteristics



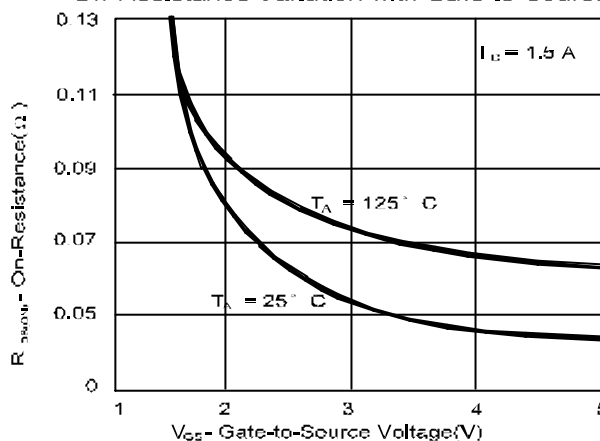
On-Resistance Variation with Drain Current and Gate Voltage



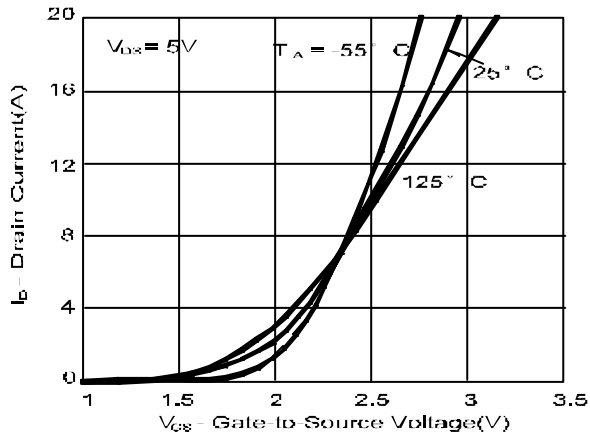
On-Resistance Variation with Temperature



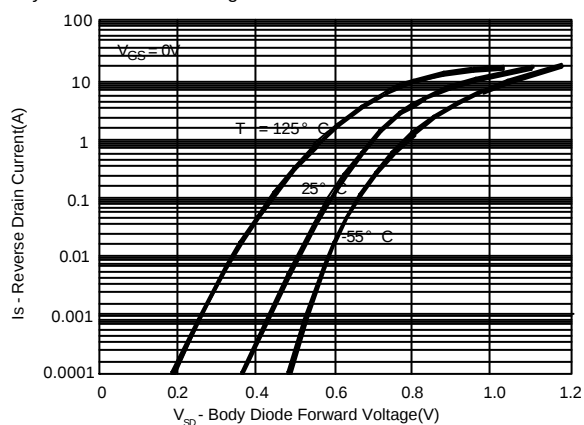
On-Resistance Variation with Gate-to-Source Voltage

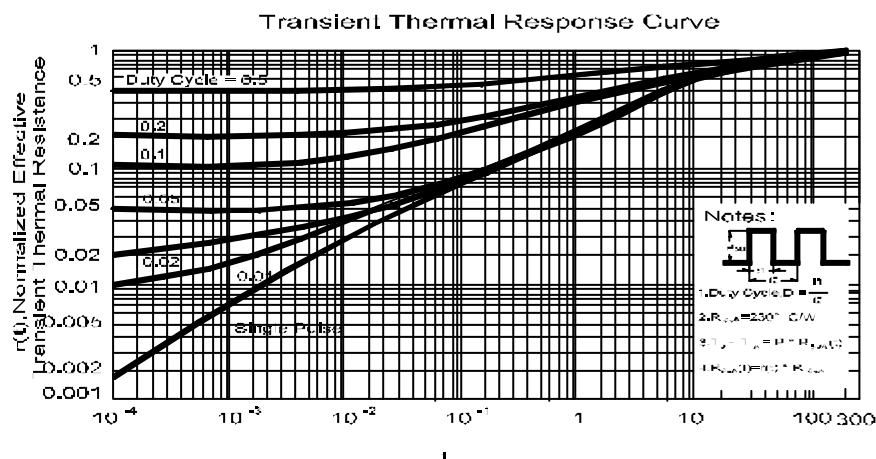
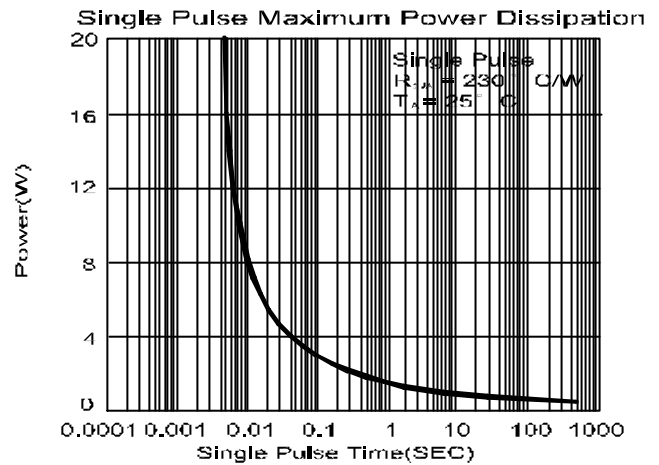
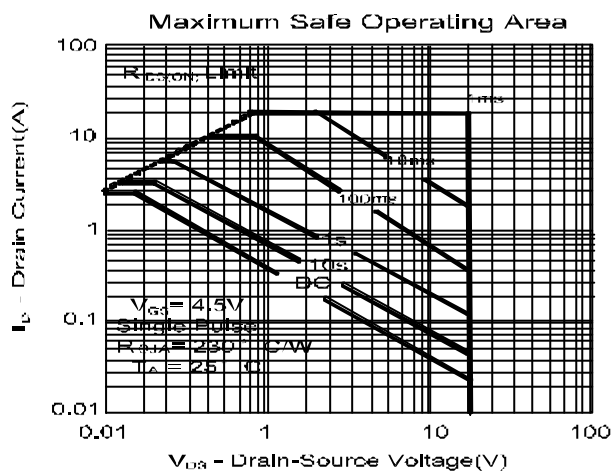
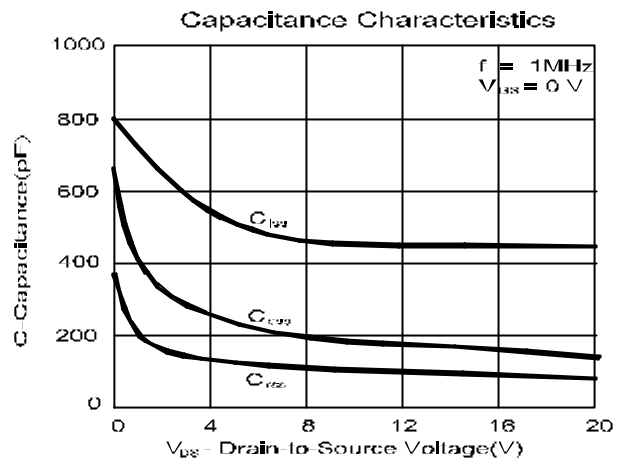
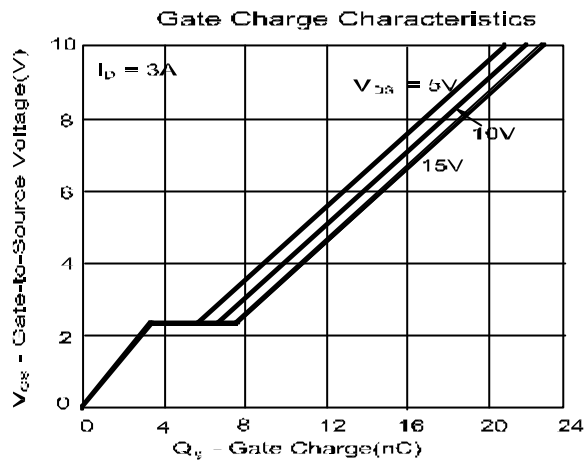


Transfer Characteristics



Body Diode Forward Voltage Variation with Source Current and Temperature





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			

