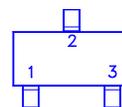
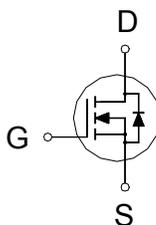


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30	32mΩ	6A



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

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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current	$T_A = 25\text{ °C}$	I_D	6	A
	$T_A = 70\text{ °C}$		5	
Pulsed Drain Current ¹		I_{DM}	30	
Power Dissipation	$T_A = 25\text{ °C}$	P_D	1.25	W
	$T_A = 70\text{ °C}$		0.8	
Operating Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C
Lead Temperature (¹ / ₁₆ " from case for 10 sec.)		T_L	275	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$R_{\theta JA}$	75	100	°C/W

¹Pulse width limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ °C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	30			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45	0.75	1.2	V
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 12V$			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 24V, V_{GS} = 0V$			1	μA
		$V_{DS} = 20V, V_{GS} = 0V, T_J = 70\text{ °C}$			10	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 5V, V_{GS} = 4.5V$	30			A
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 2.5V, I_D = 4A$		43	52	mΩ
		$V_{GS} = 4.5V, I_D = 5A$		27	32	
		$V_{GS} = 10V, I_D = 6A$		23	28	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 5V, I_D = 5A$		15		S

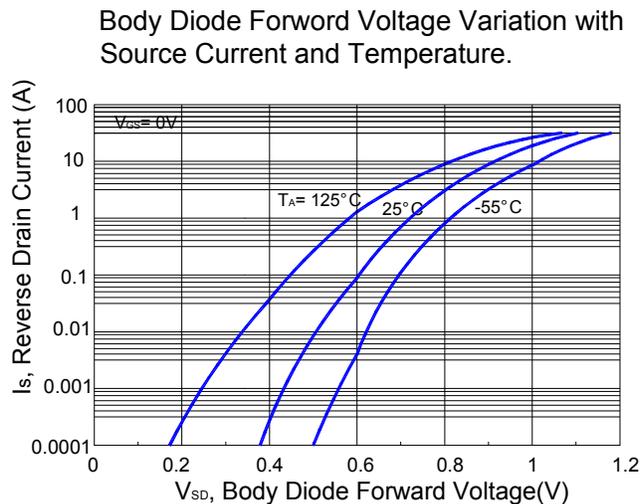
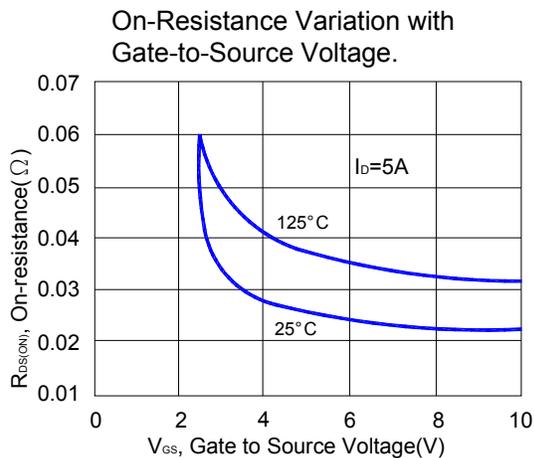
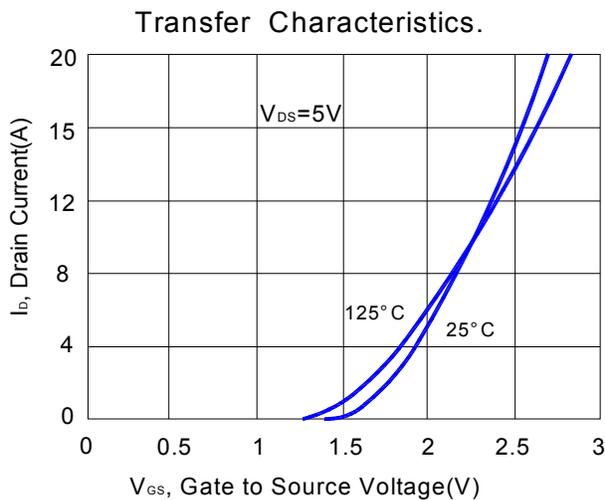
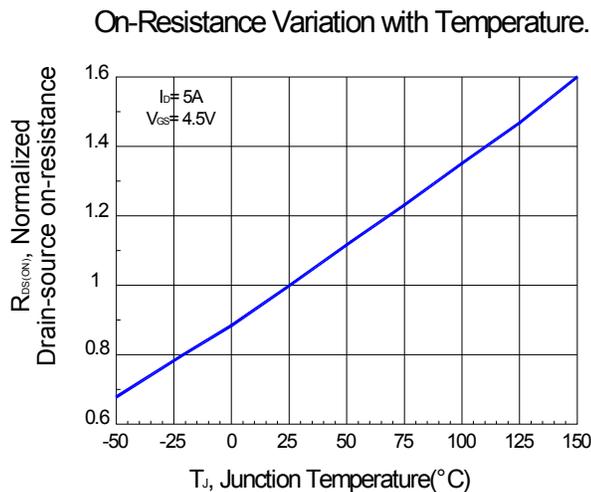
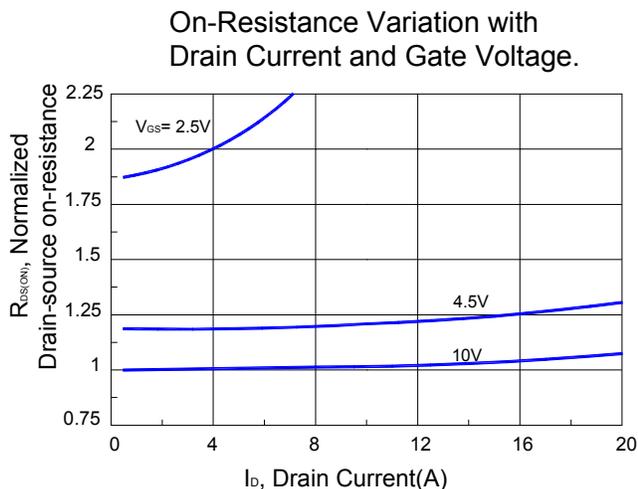
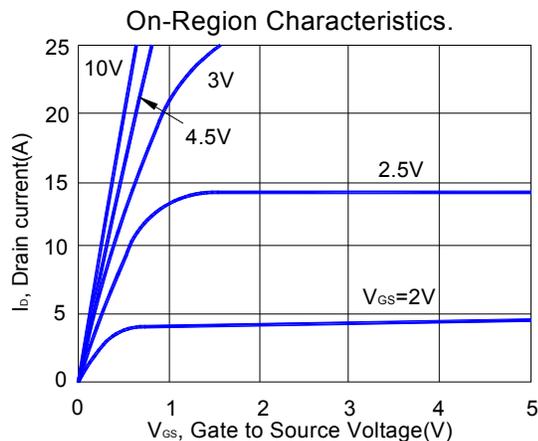
DYNAMIC						
Input Capacitance	C_{ISS}	$V_{GS} = 0V, V_{DS} = 10V, f = 1MHz$		740		pF
Output Capacitance	C_{OSS}			90		
Reverse Transfer Capacitance	C_{RSS}			66		
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 4.5V,$ $I_D = 5A$		8	12	nC
Gate-Source Charge ²	Q_{gs}			3.6		
Gate-Drain Charge ²	Q_{gd}			2		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 10V,$ $I_D \cong 1A, V_{GEN} = 4.5V, R_G = 0.2\Omega$		8	14	nS
Rise Time ²	t_r			6	12	
Turn-Off Delay Time ²	$t_{d(off)}$			19	45	
Fall Time ²	t_f			7	23	
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_A = 25^\circ C$)						
Continuous Current	I_S				1.3	A
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 $\leq 2\%$.

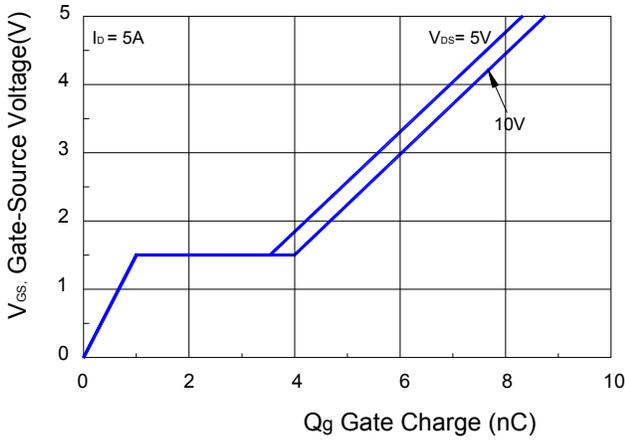
²Independent of operating temperature.

REMARK: THE PRODUCT MARKED WITH “1BYWW”, DATE CODE or LOT #

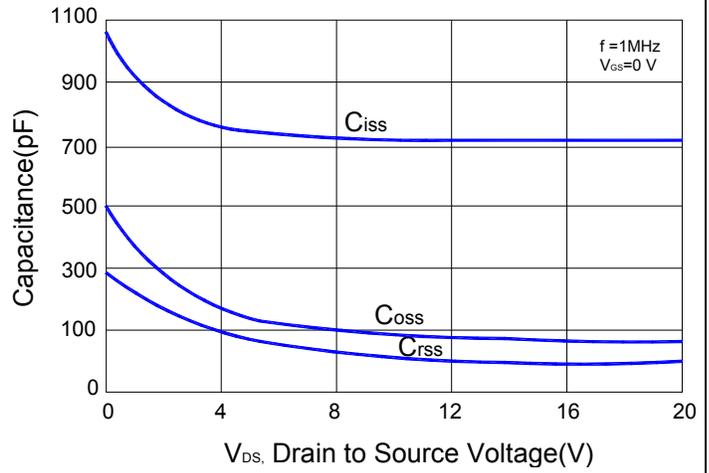
Typical Electrical Characteristics



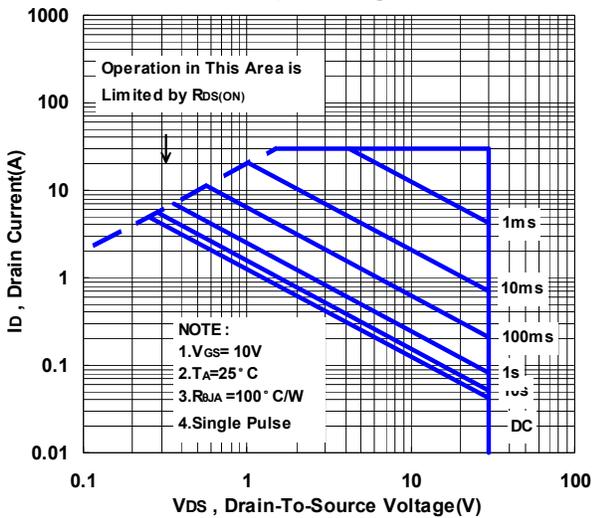
Gate-Charge Characteristics



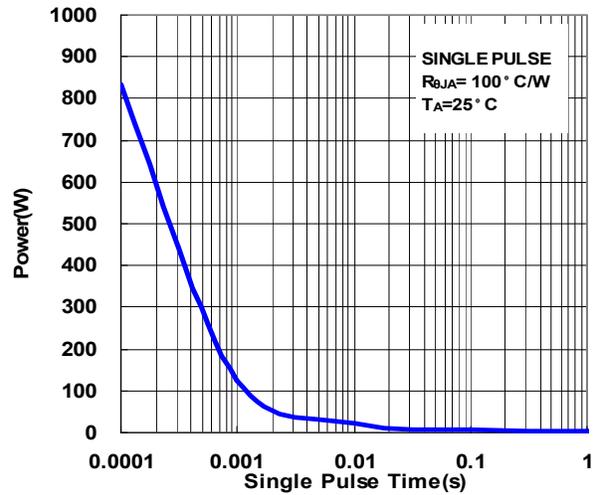
Capacitance Characteristics



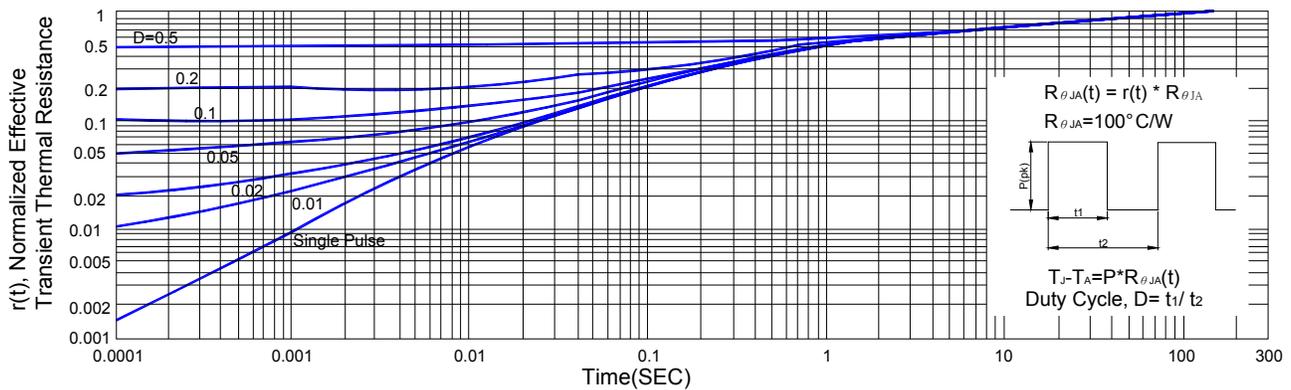
Safe Operating Area



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	0.95	1.15	H	0.1	0.15	0.35
B	2.4		3	I	0.2		0.6
C	1.4	1.6	1.8	J			
D	2.7	2.9	3.1	K			
E	0.9	1.1	1.4	L			
F	0		0.1	M			
G	0.3	0.4	0.5	N			

