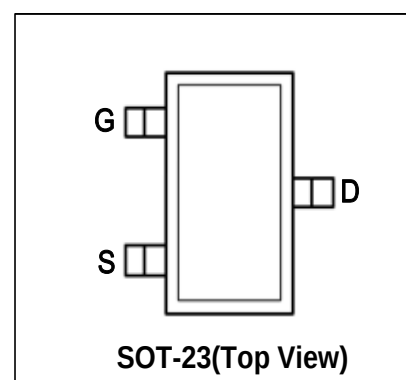
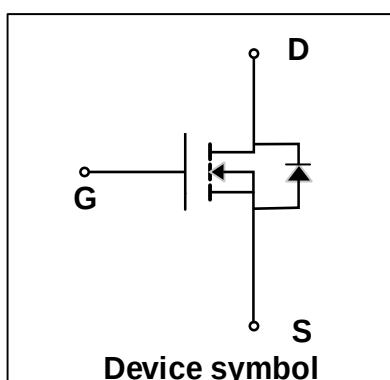
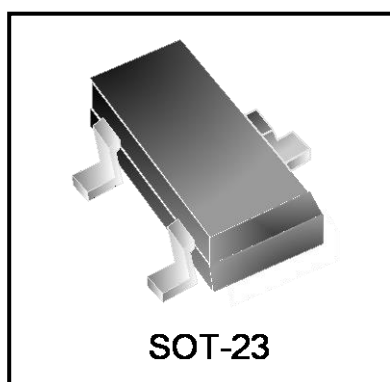


Features

- $V_{DS} = 60\text{ V}$, $I_D = 3\text{ A}$
 $R_{DS(on)} < 100\text{ m}\Omega$ @ $V_{GS} = 10\text{ V}$
 $R_{DS(on)} < 110\text{ m}\Omega$ @ $V_{GS} = 4.5\text{ V}$
- Low Input Capacitance
- Fast Switching Speed
- Low Input/output Leakage

Mechanical Characteristics

- SOT-23 Package
- Marking : Making Code
- RoHS Compliant

Schematic & PIN Configuration**Absolute Maximum Rating ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)**

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	3	A
Pulsed Drain Current ¹	I_{DM}	10	A
Power Dissipation	P_D	350	mW
Thermal Resistance from Junction to Ambient ²	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V _{GS} = 0 V, I _D = 250 μA	60	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	V _{DS} = 48V, V _{GS} = 0V	-	-	1	μA
Gate-body Leakage Current	I_{GSS}	V _{DS} = 0 V, V _{GS} = ±20V	-	-	±100	nA
Drain-Source On-state Resistance ³	R_{DS(on)}	V _{GS} = 10V, I _D = 2A	-	86	100	mΩ
		V _{GS} = 4.5V, I _D = 1A	-	92	110	
Gate Threshold Voltage ³	V_{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	1	-	2.5	V
Dynamic Characteristics ⁴						
Input Capacitance	C_{iss}	V _{GS} = 0V, V _{DS} = 30V, f = 1MHz	-	350	-	pF
Output Capacitance	C_{oss}		-	26	-	
Reverse Transfer Capacitance	C_{rss}		-	20	-	
Switching Characteristics ⁴						
Total Gate Charge	Q _g	V _{DS} = 30V, V _{GS} =4.5V,I _D =3A	-	7	-	nC
Gate-Source Charge	Q _{gs}		-	1.2	-	
Gate-Drain Charge	Q _{gd}		-	1.5	-	
Turn-On Delay Time	t_{d(on)}	V _{DD} = 30V, V _{GS} =10V,I _D =1.5A, R _{GEN} =1Ω		6.5	-	ns
Turn-On Rise Time	t_r			15.2	-	
Turn-Off Delay Time	t_{d(off)}		-	15.2	-	
Turn- Off Fall Time	t_f		-	10.3	-	
Source-Drain Diode characteristics ⁴						
Body Diode Voltage	V_{SD}	I _S = 1A, V _{GS} = 0V	-	-	1.2	V

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10\text{ s}$.
3. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 0.5\%$.
4. Guaranteed by design, not subject to production

Typical Characteristics

Figure 1. Output Characteristics

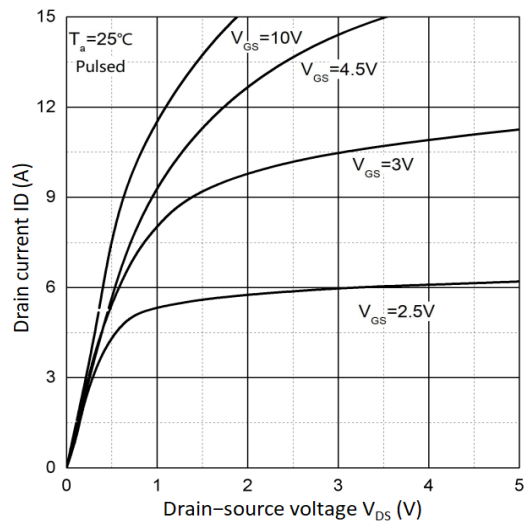


Figure 2. Transfer Characteristics

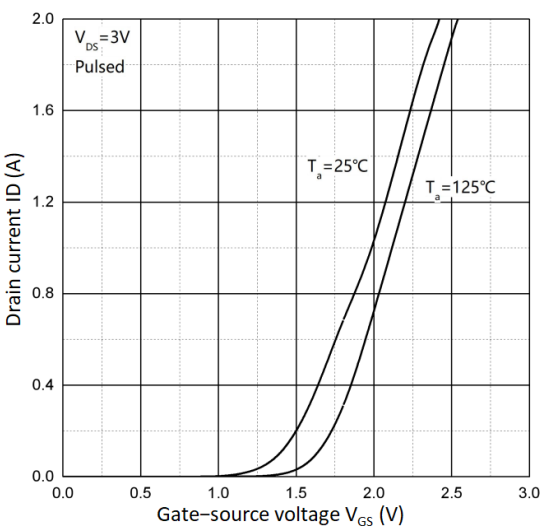


Figure 3. $R_{DS(ON)}$ vs. I_D

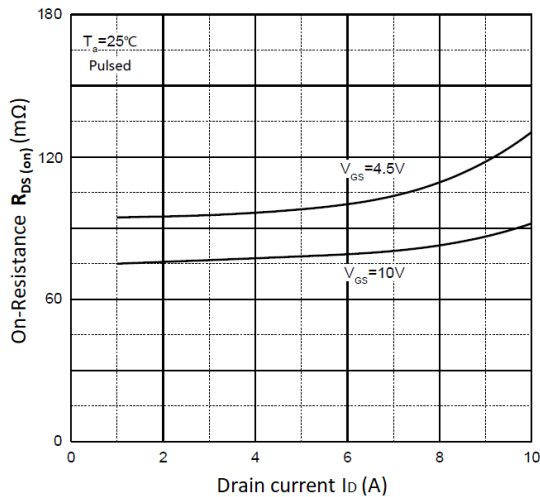


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

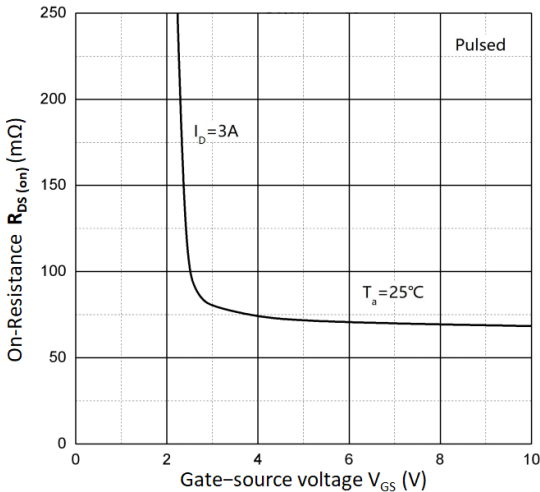


Figure 5. I_S vs. V_{SD}

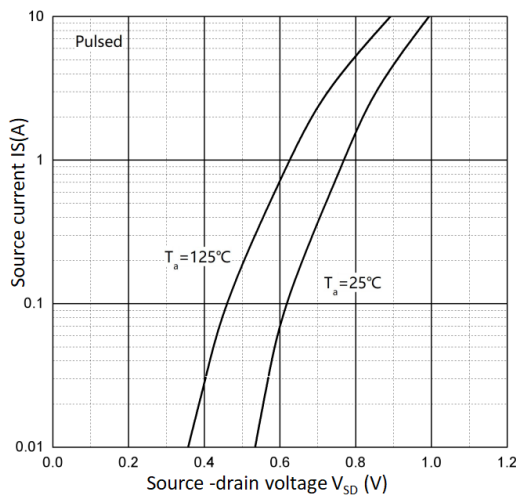
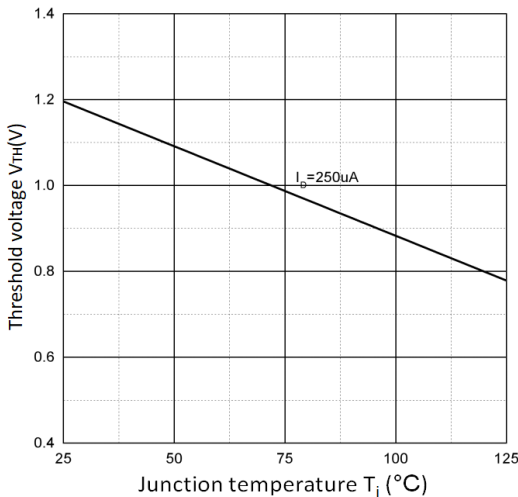


Figure 6. Threshold Voltage



Outline Drawing – SOT-23

PACKAGE OUTLINE		DIMENSIONS			
SYMBOL	OL	MILLIMETER		INCHES	
		MIN	MAX	MIN	MAX
A		0.90	1.15	0.035	0.045
A1		0.00	0.10	0.000	0.004
A2		0.60	0.70	0.024	0.028
b		0.30	0.50	0.012	0.020
c		0.08	0.15	0.003	0.006
D		2.80	3.00	0.110	0.118
E		2.25	2.55	0.089	0.100
E1		1.20	1.40	0.047	0.055
e		0.95 BSC		0.0374 BSC	
e1		1.80	2.00	0.071	0.079
L		0.45	0.65	0.018	0.026
θ		0°	8°	0°	8°

DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.080	2.02
C	0.032	0.80
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.9 BSC
b	0.032	0.80

Notes

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Pin 3 is the cathode (Unidirectional Only).
4. Dimensions are exclusive of mold flash and metal burrs.

Marking Codes

Part Number	EM06N30M
Marking Code	

Package Information

Qty: 3k/Reel

Revision History

No.	Version	Date	Revision Item	Request	Function and characteristic checking	Package dimension checking	Typos checking
1	1.0	2018-09-13	Released Version	Qi Shu Kun	Qi Shu Kun	Liu Jia Ying	Liu Jia Ying