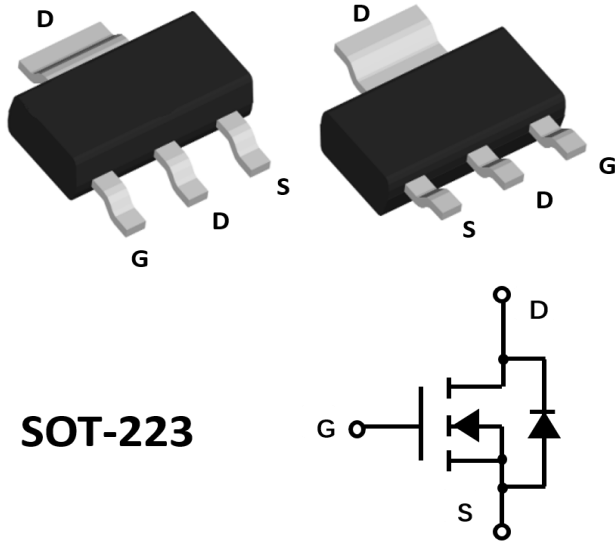


N-Channel Enhancement Mode Field Effect Transistor



Product Summary

• V_{DS}	60V
• I_D	5.0A
• $R_{DS(ON)}$ (at $V_{GS}=10V$)	<44 mohm
• $R_{DS(ON)}$ (at $V_{GS}=4.5V$)	<49 mohm

General Description

- Trench Power MV MOSFET technology
- High density cell design for Low $R_{DS(ON)}$
- High Speed switching

Applications

- Battery protection
- Load switch
- Power management

■ Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise noted)

Parameter		Symbol	Maximum	Unit
Drain-source Voltage		V_{DS}	60	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25^{\circ}C$ @ Steady State	I_D	5.0	A
	$T_A=70^{\circ}C$ @ Steady State		4.0	
Pulsed Drain Current ^A		I_{DM}	25	A
Total Power Dissipation @ $T_A=25^{\circ}C$		P_D	2.5	W
Thermal Resistance Junction-to-Ambient @ Steady State ^B		$R_{\theta JA}$	50	$^{\circ}C/W$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^{\circ}C$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJM05N06A	F2	6005	2500	5000	40000	13" reel



YJM05N06A

■ Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V, I _D =250μA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =250μA	1.0	1.5	2.5	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D =5.0A		35	44	mΩ
		V _{GS} = 4.5V, I _D =4.0A		39	49	
Diode Forward Voltage	V _{SD}	I _S =5.0A, V _{GS} =0V		0.8	1.2	V
Maximum Body-Diode Continuous Current	I _S				5.0	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f=1MHZ		800		pF
Output Capacitance	C _{oss}			72		
Reverse Transfer Capacitance	C _{rss}			38		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =30V, I _D =5.0A		15		nC
Gate Source Charge	Q _{gs}			2.4		
Gate Drain Charge	Q _{gd}			2.5		
Reverse Recovery Charge	Q _{rr}	I _F =2A, di/dt=500A/us		23		ns
Reverse Recovery Time	t _{rr}			45		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DD} =30V, I _D =2A, R _L =1Ω R _{GEN} =3Ω		5		
Turn-on Rise Time	t _r			39		
Turn-off Delay Time	t _{D(off)}			19		
Turn-off Fall Time	t _f			7		

A. Repetitive Rating: Pulse width limited by maximum junction temperature.

B. Surface Mounted on FR4 Board, t ≤ 10 sec.



■ Typical Performance Characteristics

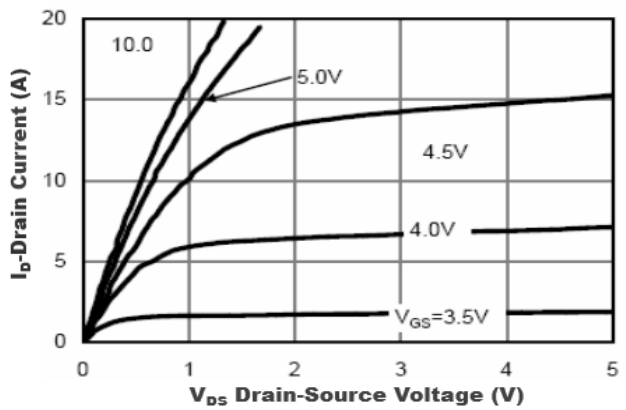


Figure1. Output Characteristics

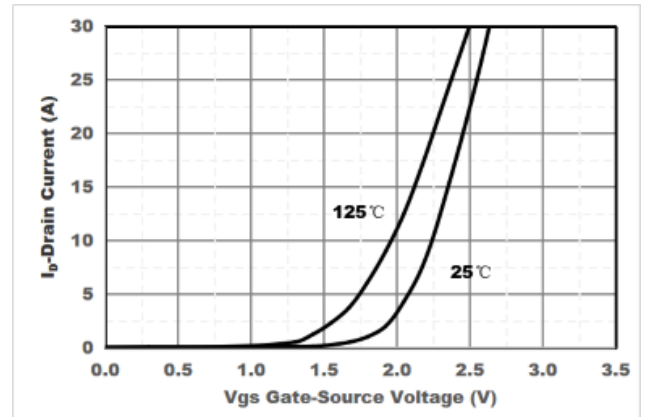


Figure2. Transfer Characteristics

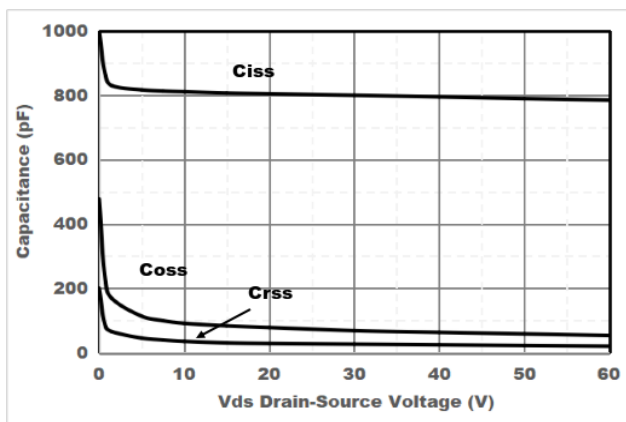


Figure3. Capacitance Characteristics

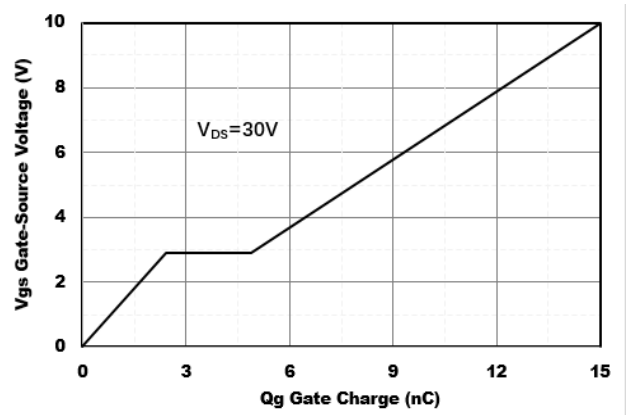


Figure4. Gate Charge

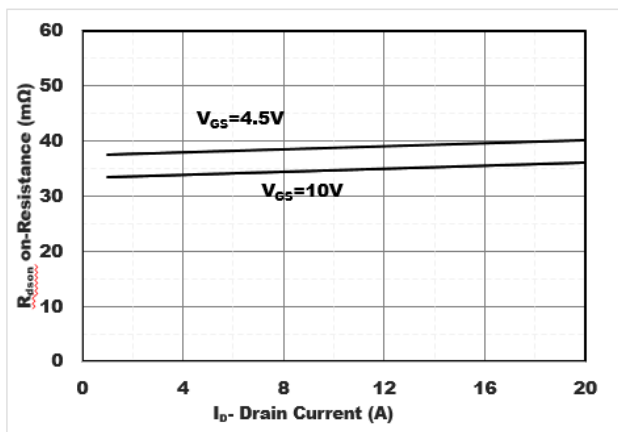


Figure5. Drain-Source on Resistance

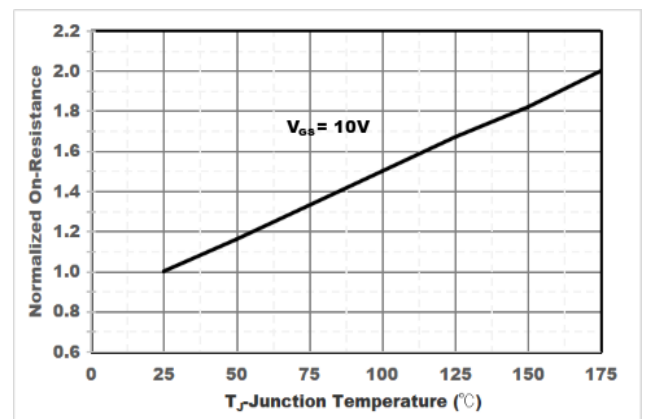


Figure6. Drain-Source on Resistance

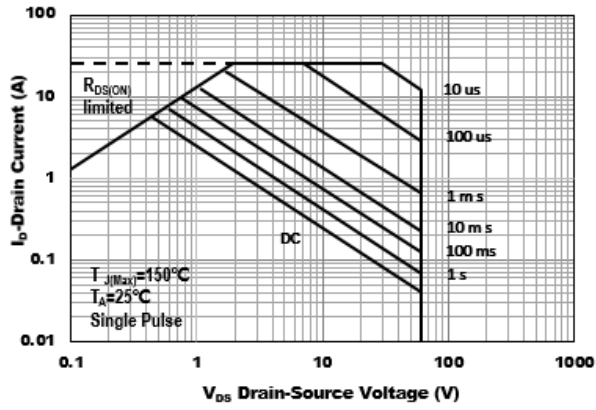


Figure7. Safe Operation Area

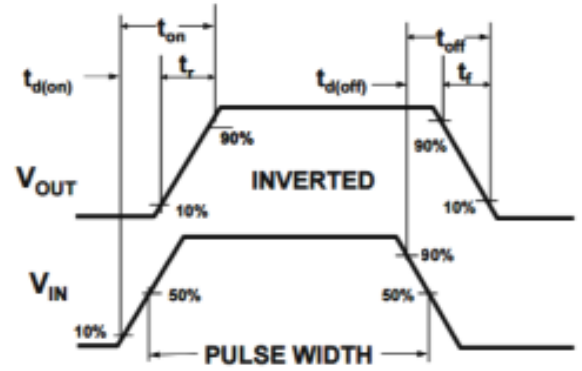
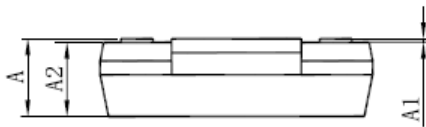
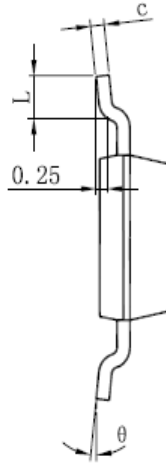
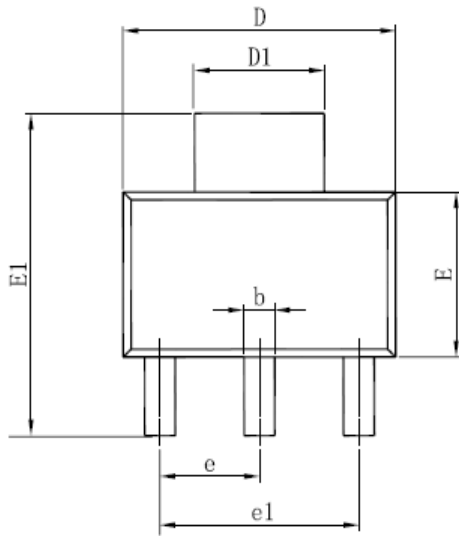


Figure8. Switching wave



YJM05N06A

■ SOT-223 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.520	1.800	0.060	0.071
A1	0.000	0.100	0.000	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.820	0.026	0.032
c	0.250	0.350	0.010	0.014
D	6.200	6.400	0.244	0.252
D1	2.900	3.100	0.114	0.122
E	3.300	3.700	0.130	0.146
E1	6.830	7.070	0.269	0.278
e	2.300(BSC)		0.091(BSC)	
e1	4.500	4.700	0.177	0.185
L	0.900	1.150	0.035	0.045
θ	0°	10°	0°	10°



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