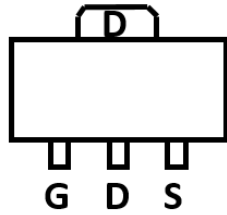
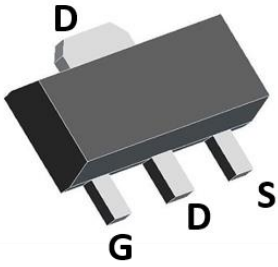
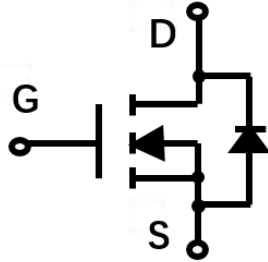


N-Channel Enhancement Mode Field Effect Transistor



SOT-89



Product Summary

- V_{DS} 100V
- I_D 3A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) < 110 mohm
- $R_{DS(ON)}$ (at $V_{GS}=4.5V$) < 120 mohm

General Description

- Trench Power MV MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$

Applications

- DC-DC Converters
- Power management functions

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

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	100	V
Gate-source Voltage	V_{GS}	± 20	V
Drain Current	I_D	$T_A=25^\circ\text{C}$	3
		$T_A=70^\circ\text{C}$	2.4
Pulsed Drain Current ^A	I_{DM}	12	A
Total Power Dissipation	P_D	$T_A=25^\circ\text{C}$	1.5
		$T_C=25^\circ\text{C}$	4.0
Thermal Resistance Junction-to-Ambient ^B	$R_{\theta JA}$	83	$^\circ\text{C}/\text{W}$
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	31	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^\circ\text{C}$

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJH03N10A	F2	1003.	1000	10000	40000	7" reel



YJH03N10A

■ Electrical Characteristics ($T_J=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100V, V_{GS}=0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.8	3.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=3A$		95	110	m Ω
		$V_{GS}=4.5V, I_D=2.4A$		100	120	
Diode Forward Voltage	V_{SD}	$I_S=3A, V_{GS}=0V$		0.8	1.2	V
Maximum Body-Diode Continuous Current	I_S				3	A
Dynamic Parameters						
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V, f=1\text{MHz}$		785		pF
Output Capacitance	C_{oss}			38		
Reverse Transfer Capacitance	C_{rss}			30		
Switching Parameters						
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=50V, I_D=3A$		16		nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			2.6		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=50V, R_L=6.4\Omega$ $R_{GEN}=3\Omega$		5		ns
Turn-on Rise Time	t_r			40		
Turn-off Delay Time	$t_{D(off)}$			20		
Turn-off fall Time	t_f			7		

A. Pulse Test: Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.



■ Typical Performance Characteristics

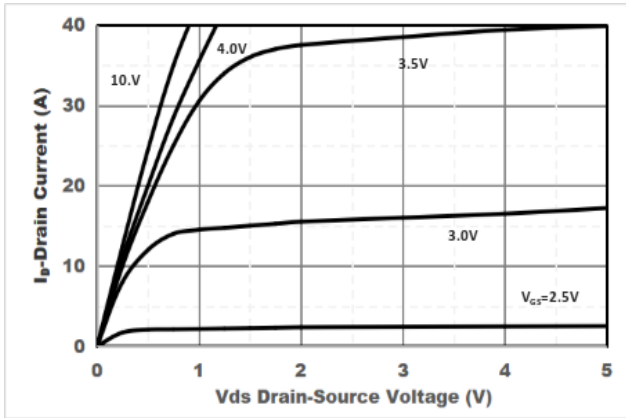


Figure1. Output Characteristics

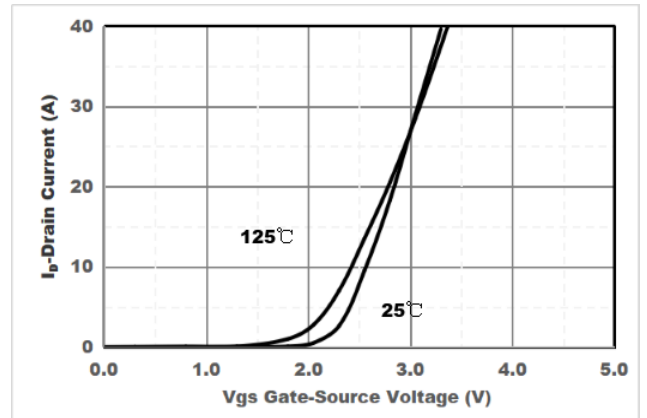


Figure2. Transfer Characteristics

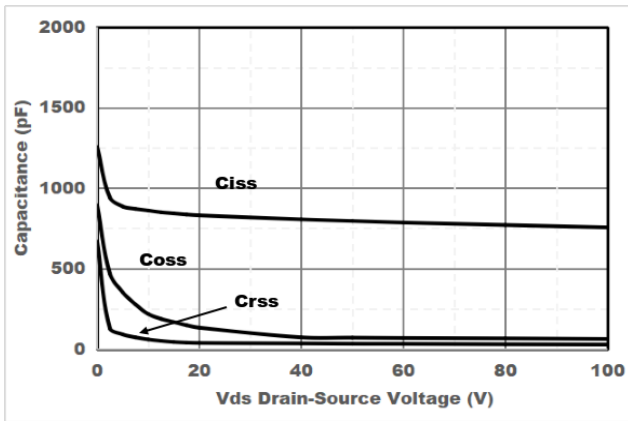


Figure3. Capacitance Characteristics

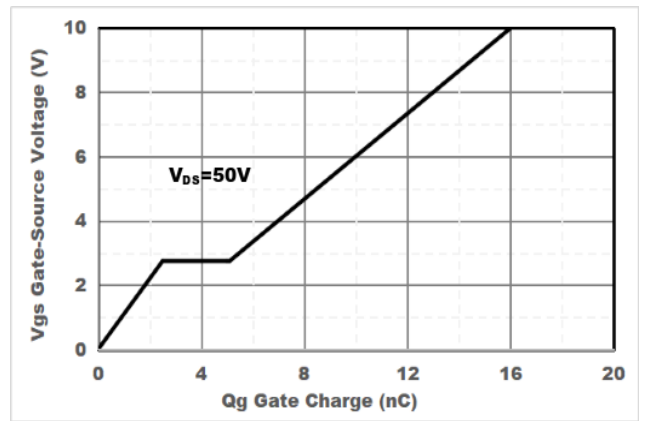


Figure4. Gate Charge

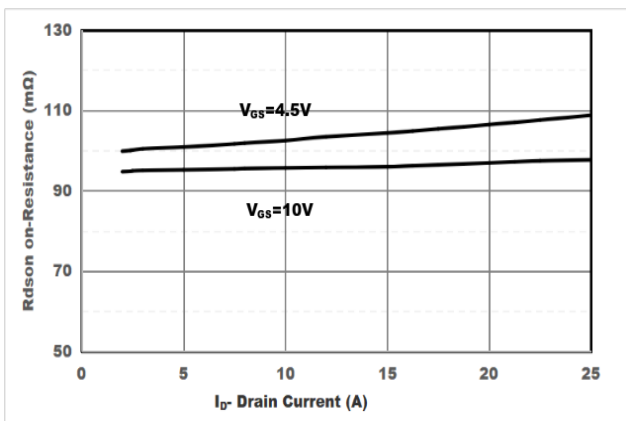


Figure5. Drain-Source on Resistance

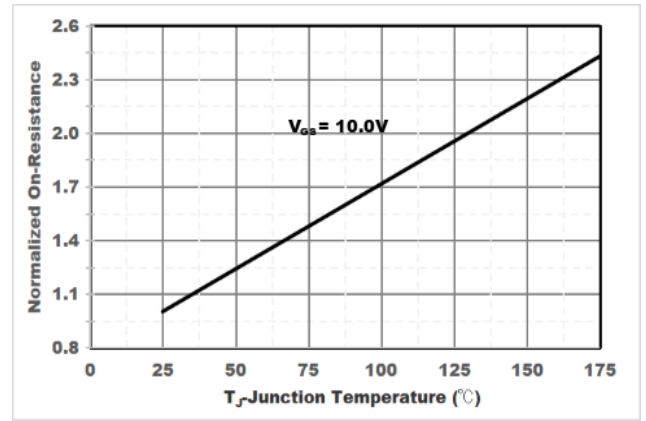


Figure6. Drain-Source on Resistance



YJH03N10A

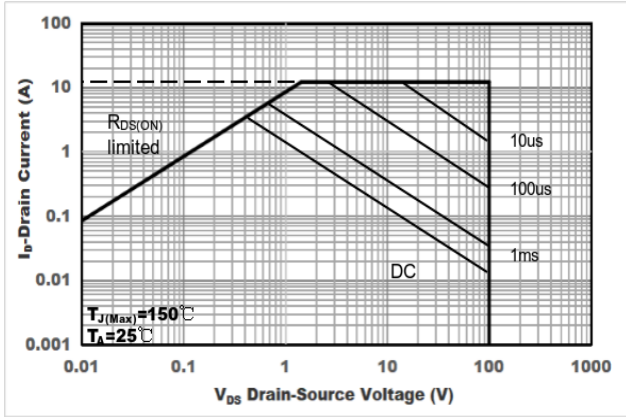


Figure7. Safe Operation Area

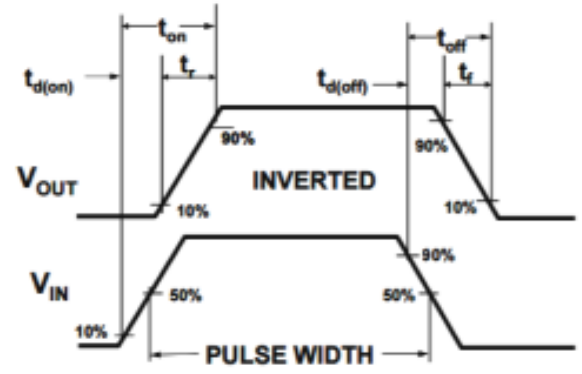
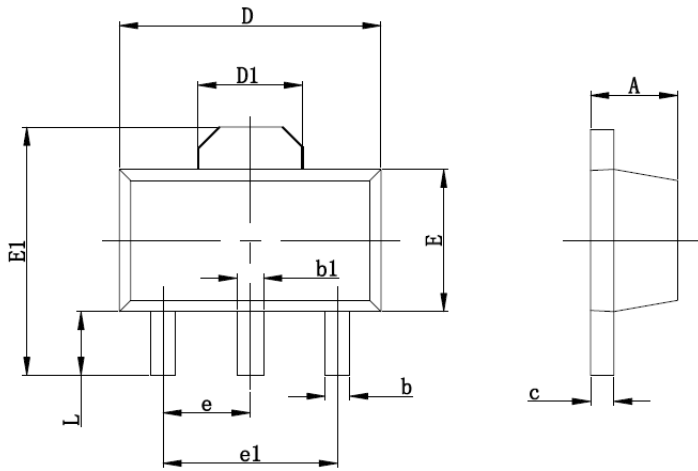


Figure8. Switching wave



YJH03N10A

■ SOT-89 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.350	0.520	0.013	0.197
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.350	2.550	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060TYP	
e1	3.000 TYP		0.118TYP	
L	0.900	1.100	0.035	0.047



YJH03N10A

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