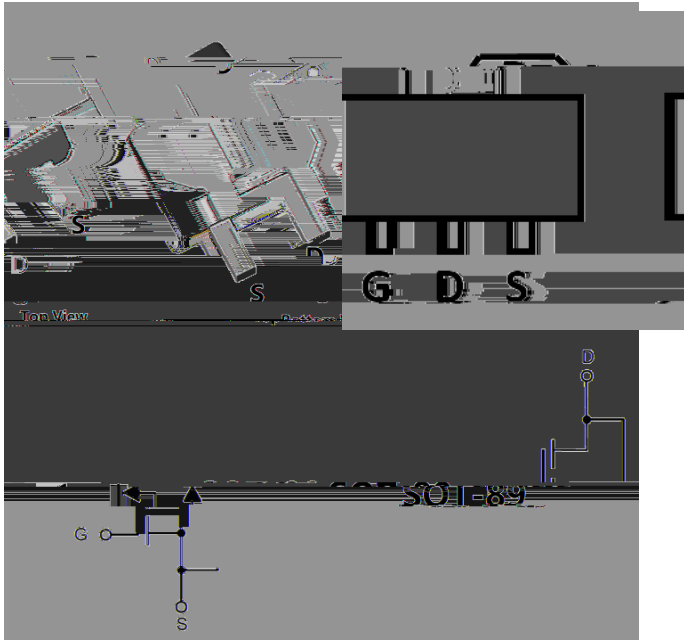




N-Channel Enhancement Mode Field Effect Transistor



Product Summary

• V_{DS}	60V
• I_D	3.5A
• $R_{DS(ON)}$ (at $V_{GS}=10V$)	100mohm
• $R_{DS(ON)}$ (at $V_{GS}=4.5V$)	120mohm
• $R_{DS(ON)}$ (at $V_{GS}=2.5V$)	200mohm

General Description

- Trench Power LV MOSFET technology
- High Density Cell Design for Low $R_{DS(ON)}$
- High Speed switching
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

- Battery protection
- Load switch
- Power management

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

Parameter	Symbol	Limit	Unit
Drain-source Voltage	V_{DS}	60	V
Gate-source Voltage	V_{GS}	± 16	V
Drain Current	I_D	3.5	A
Thermal Resistance Junction to Ambient			

B	$R_{\theta JA}$	74	/ W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 +150	

■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	Marking	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
YJH03N06B	F1	6003	1000	10000	40000	7" reel
	F2	6003	1000	8000	32000	7" reel



YJH03N06B

■ 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} =±16V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.65	0.95	1.55	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = 10V, I _D = 3A		86	100	mΩ
		V _{GS} = 4.5V, I _D = 2A		90	120	
		V _{GS} = 2.5V, I _D = 1A		100	200 = 10V..V	
Diode Forward Voltage	V _{SD}	I _S = 3.0A,V _{GS} =0V		0.8	1.2	V
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =30V,V _{GS} =0V,f=1MHZ		451		pF
Output Capacitance	C _{oss}			38		
Reverse Transfer Capacitance	C _{rss}			31		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} = 10V,V _{DS} = 30V,I _D = 3.0A		13.8		nC
Gate-Source Charge	Q _{gs}			2.2		
Gate-Drain Charge	Q _{gd}			1.9		
Reverse Recovery Chrage	Q _{rr}	I _F = 3A, di/dt=100A/us		7.6		
Reverse Recovery Time	t _{rr}			30		
						ns



■ Typical Performance Characteristics

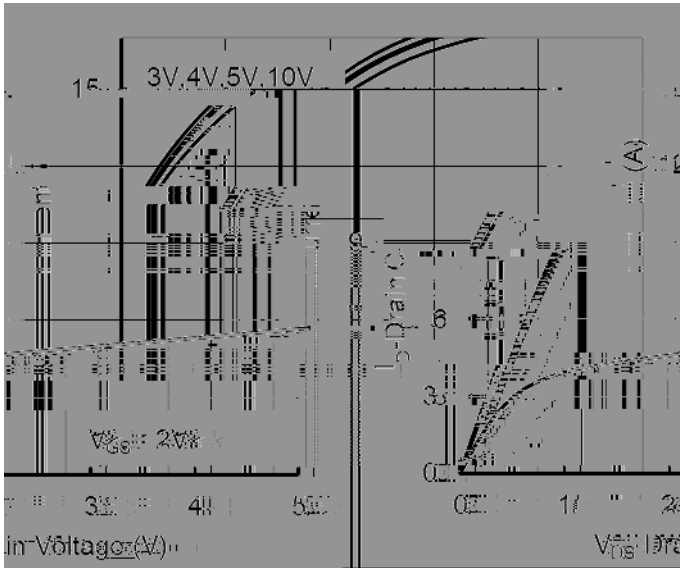


Figure1. Output Characteristics

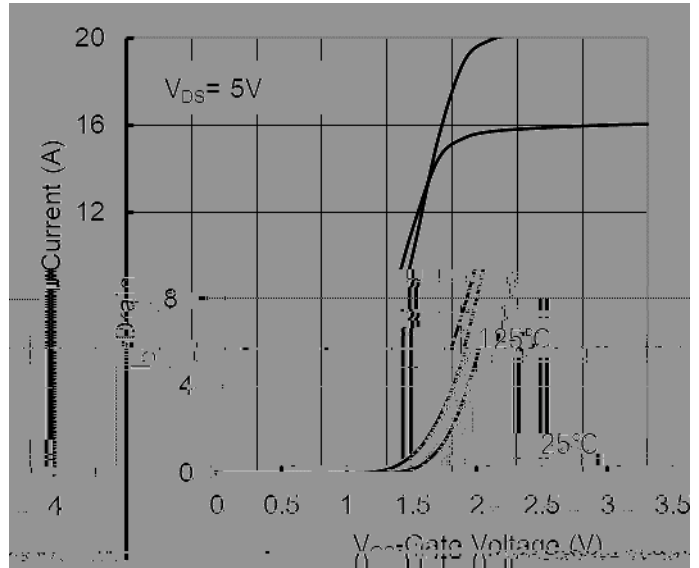


Figure2. Transfer Characteristics

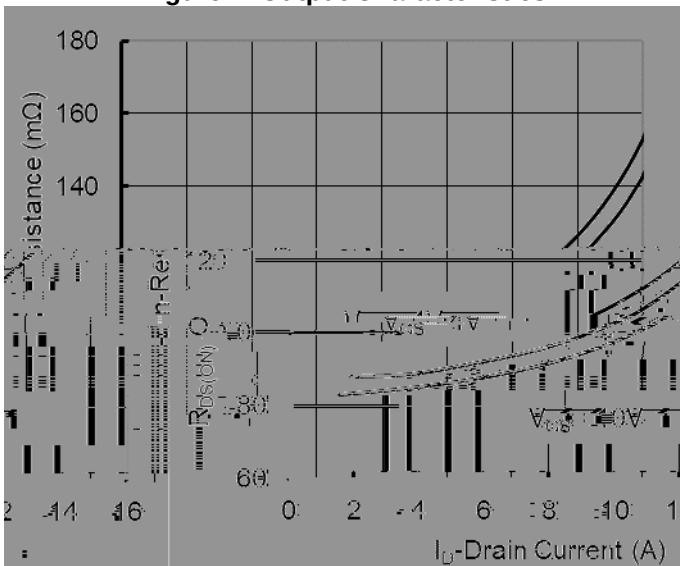


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

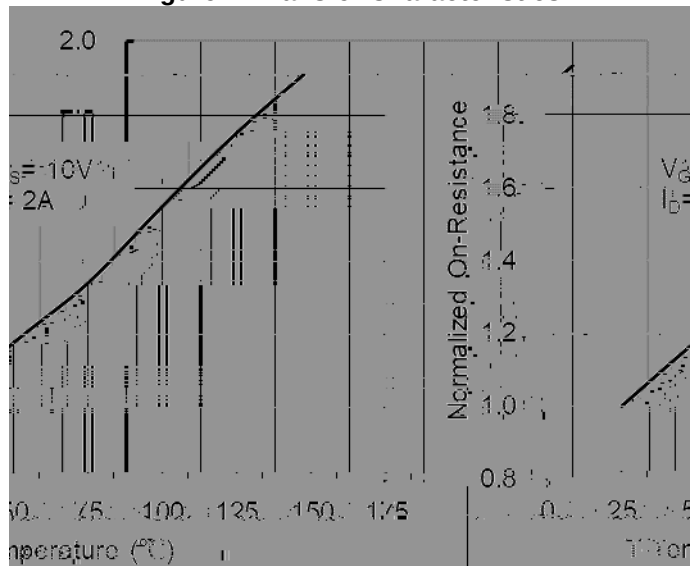


Figure 4: On-Resistance vs. Junction Temperature

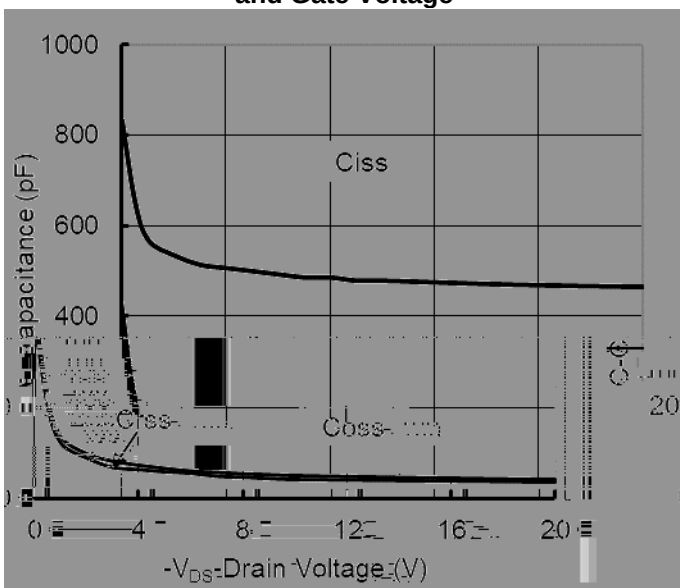


Figure5. Capacitance Characteristics

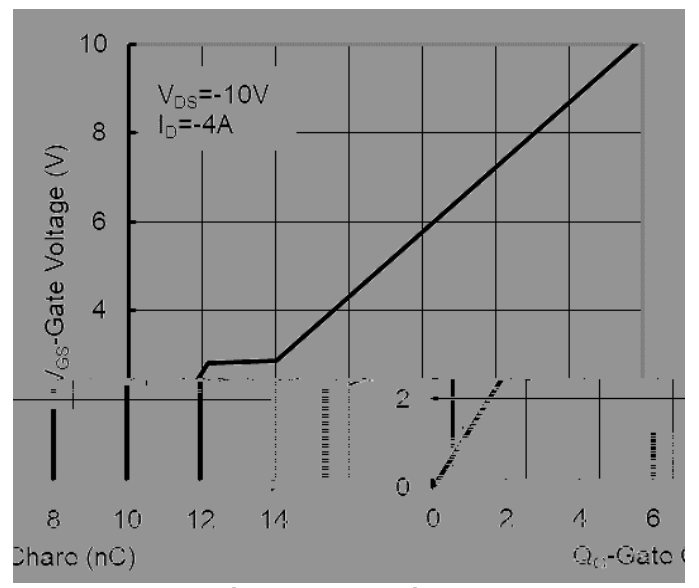
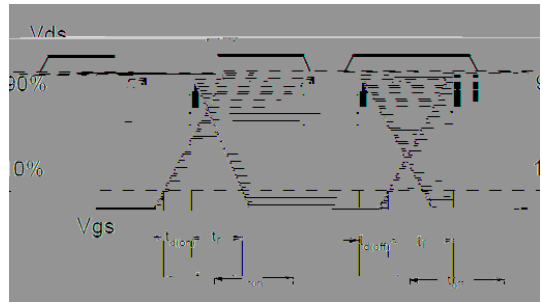
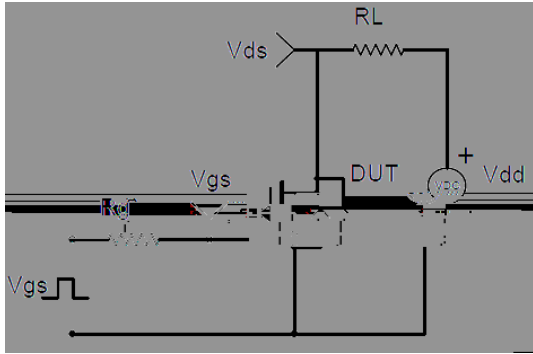


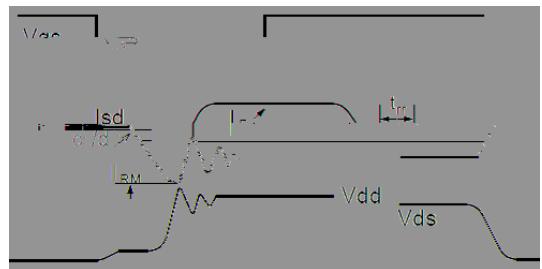
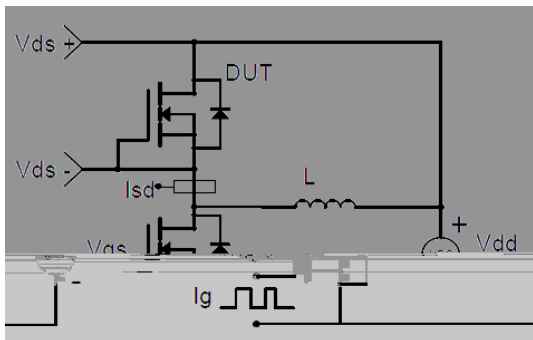
Figure6. Gate Charge

)LJXUH 6DIH 2SHUDWLRQ \$UHD LJXUH 0D[LPXP &RQWLQXRXV 'UDL
YV \$PELHQW 7HPSHUDWXUH

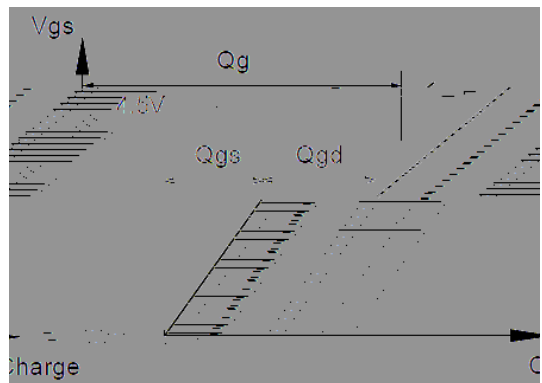
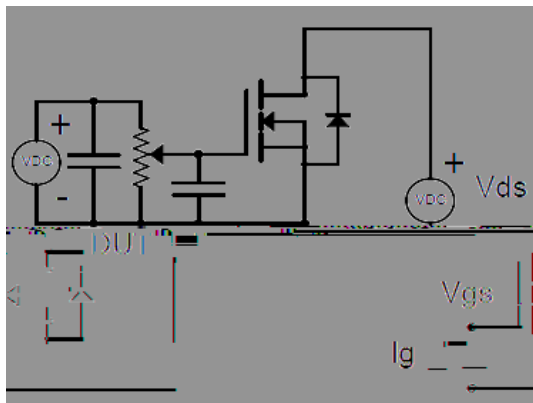
)LJXUH 1RUPDOL]HG DQYLFXW77KHUPDO ,PSHGDQFH



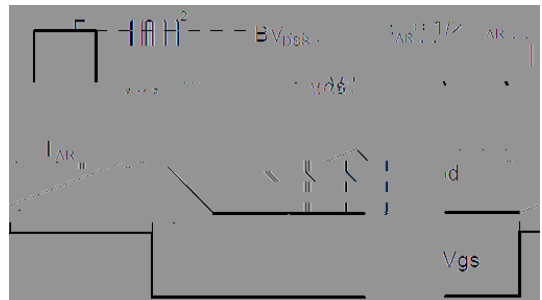
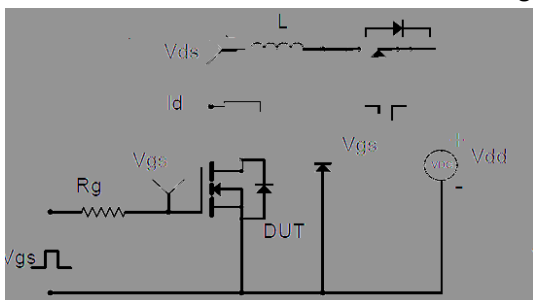
Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



Gate Charge Test Circuit & Waveform



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



■ SOT-89 Package Information

TYPE A(PACKING CODE:F1):

b	
D1	

YJH03N06B
