

ITO-220AB Plastic-Encapsulate MOSFETS

● Features

- $V_{DS}=650V$
- $I_D=8A$
- $R_{DS(on)}@V_{GS}=10V < 0.6\Omega$
- Fast Switching
- Low Gate Charge and R_{dson}
- Super Junction Technology

Drain-source Voltage
650V
Drain Current
8 Ampere

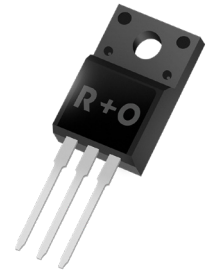
● Applications

- Power switching application
- Battery management
- Uninterruptible power supply

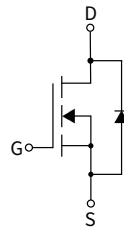
● Mechanical Data

- Case: ITO-220AB
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

ITO-220AB



● Function Diagram



● Ordering Information

PACKAGE	UNIT WEIGHT(g)	TUBE(pcs)	BOX(pcs)
ITO-220AB	1.767	50	2500

● Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Drain-source Voltage	V_{DS}	V	650
Gate-source Voltage	V_{GS}	V	± 30
Drain Current	I_D	A	8
Pulsed Drain Current ⁽¹⁾	I_{DM}	A	30
Total Power Dissipation	P_D	W	31
Single pulse avalanche energy ⁽²⁾	EAS	mJ	125
Junction temperature	T_J	°C	-55 ~+150
Storage temperature	T_{stg}	°C	-55 ~+150
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	°C / W	4
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	°C / W	65

● Static Parameter Characteristics (Tj=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	V	650	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=650V, V_{GS}=0V$	μA	—	—	1.0
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 30V, V_{DS}=0V$	nA	—	—	± 100
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	3.5	4.2	5
Static Drain-Source On-Resistance ⁽³⁾	$R_{DS(on)}$	$V_{GS}=10V, I_D=4A$	Ω	—	0.53	0.6

● Dynamic Parameters

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	pF	—	802	—
Output Capacitance	C_{oss}			—	426	—
Reverse Transfer Capacitance	C_{rss}			—	18	—

● Switching Parameters

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=400V, I_D=8A, R_{GEN}=25\Omega$	nS	—	10	—
Turn-on Rise Time	t_r		nS	—	12	—
Turn-off Delay Time	$t_{D(off)}$		nS	—	36	—
Turn-off fall Time	t_f		nS	—	14	—
Total Gate Charge	Q_g	$V_{DS}=480V, I_D=8A, V_{GS}=10V$	nC	—	19.2	—
Gate-Source Charge	Q_{gs}		nC	—	4.5	—
Gate-Drain Charge	Q_{gd}		nC	—	10	—

● Driian-Source Diode Characteristics

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Diode Forward Voltage	V_{SD}	$I_S=8A, V_{GS}=0V$	V	—	—	1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	8
Reverse Recovery Time	T_{rr}	$I_S=8A, di/dt=200A/\mu s, T_J=25^\circ C$	nS	—	260	—
Reverse Recovery Charge	Q_{rr}		μC	—	3	—

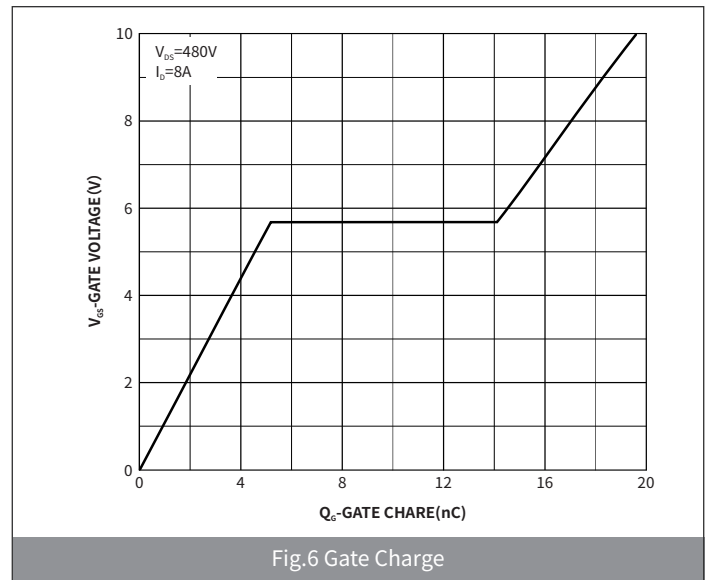
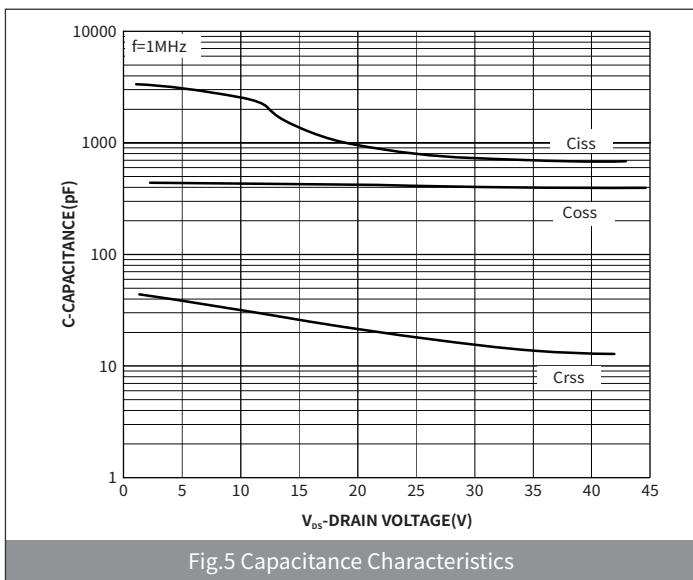
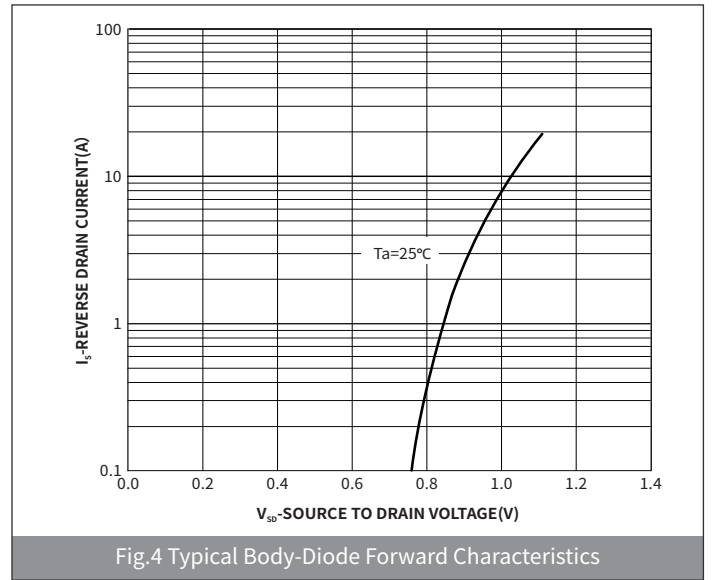
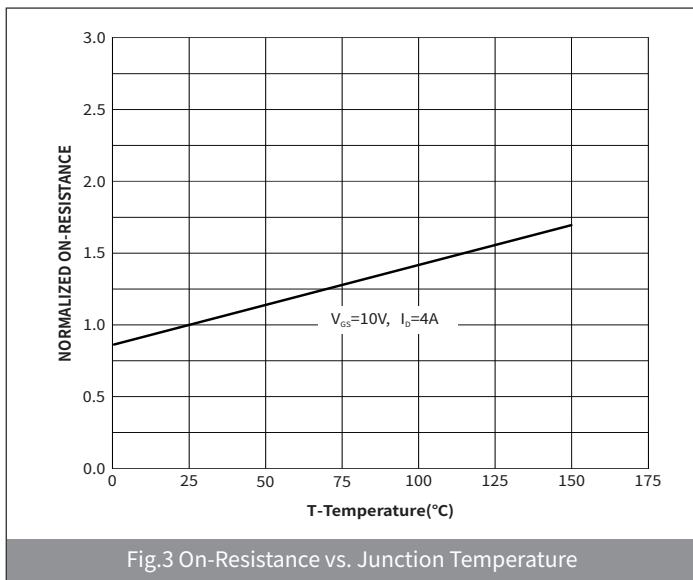
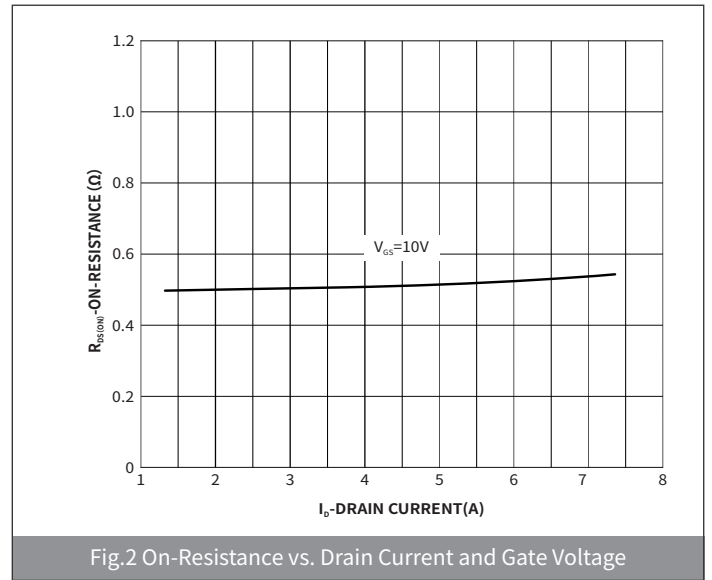
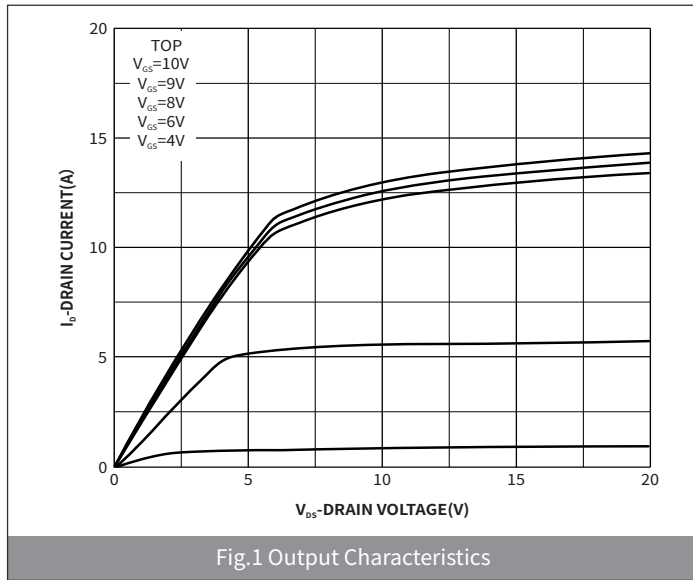
Note :

(1) Repetitive Rating: Pulse width limited by maximum junction temperature.

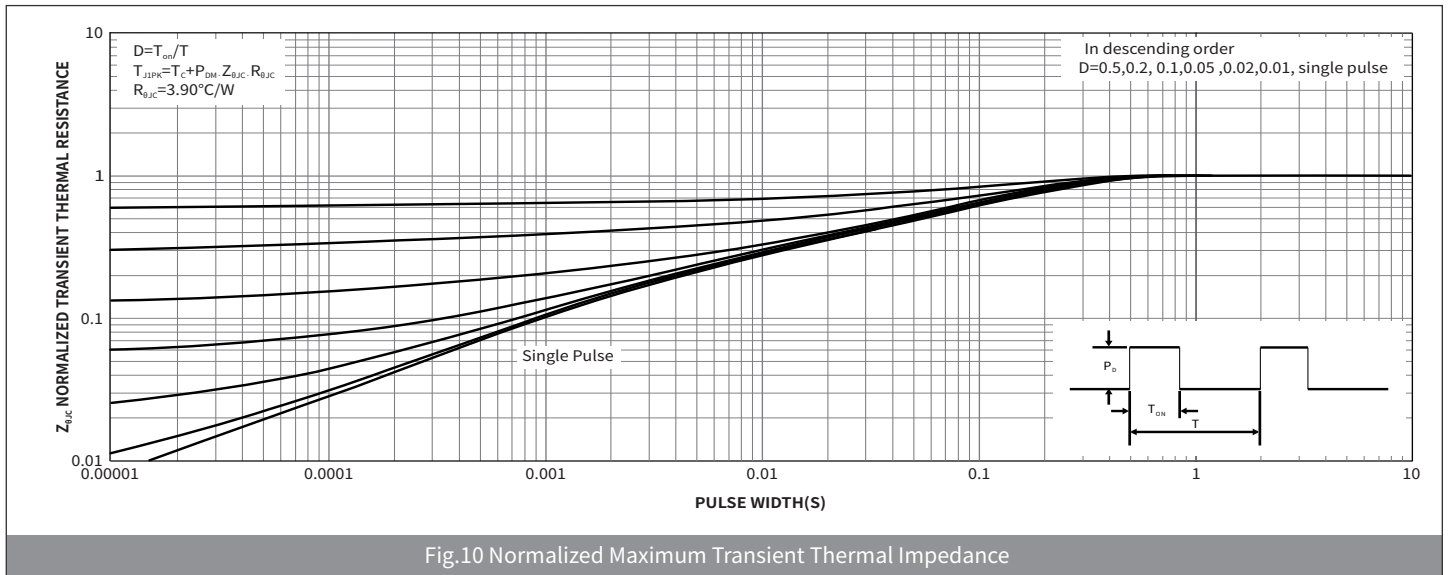
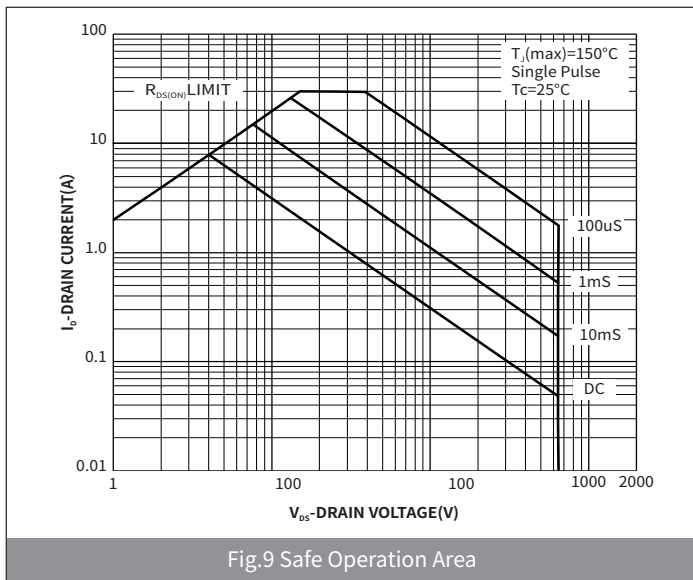
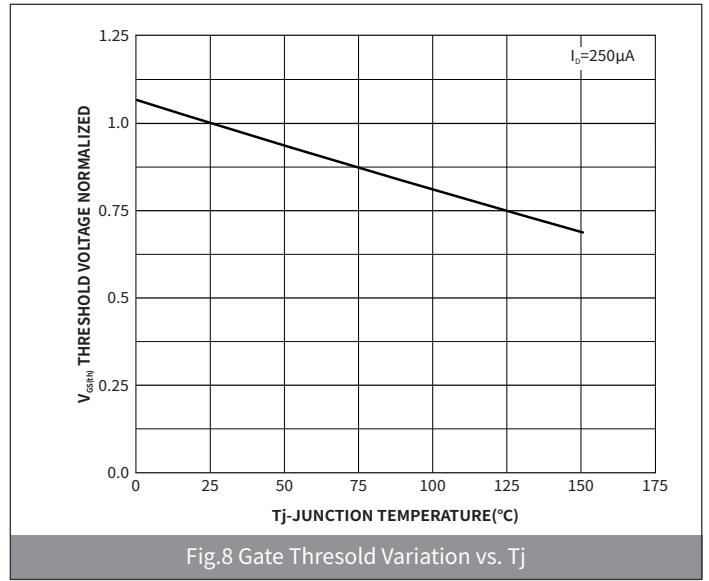
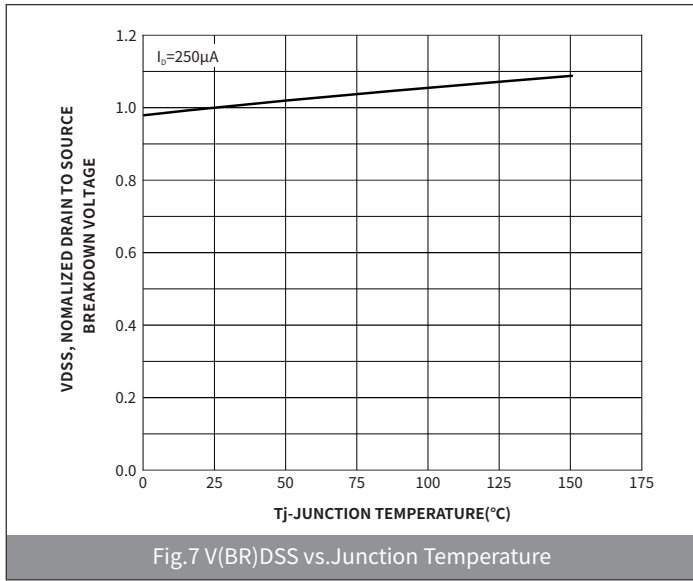
(2) EAS condition : Tj=25°C ,VDD=50V,VG=10V,L=10mH,IAS=5A,Rg=25Ω.

(3) Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



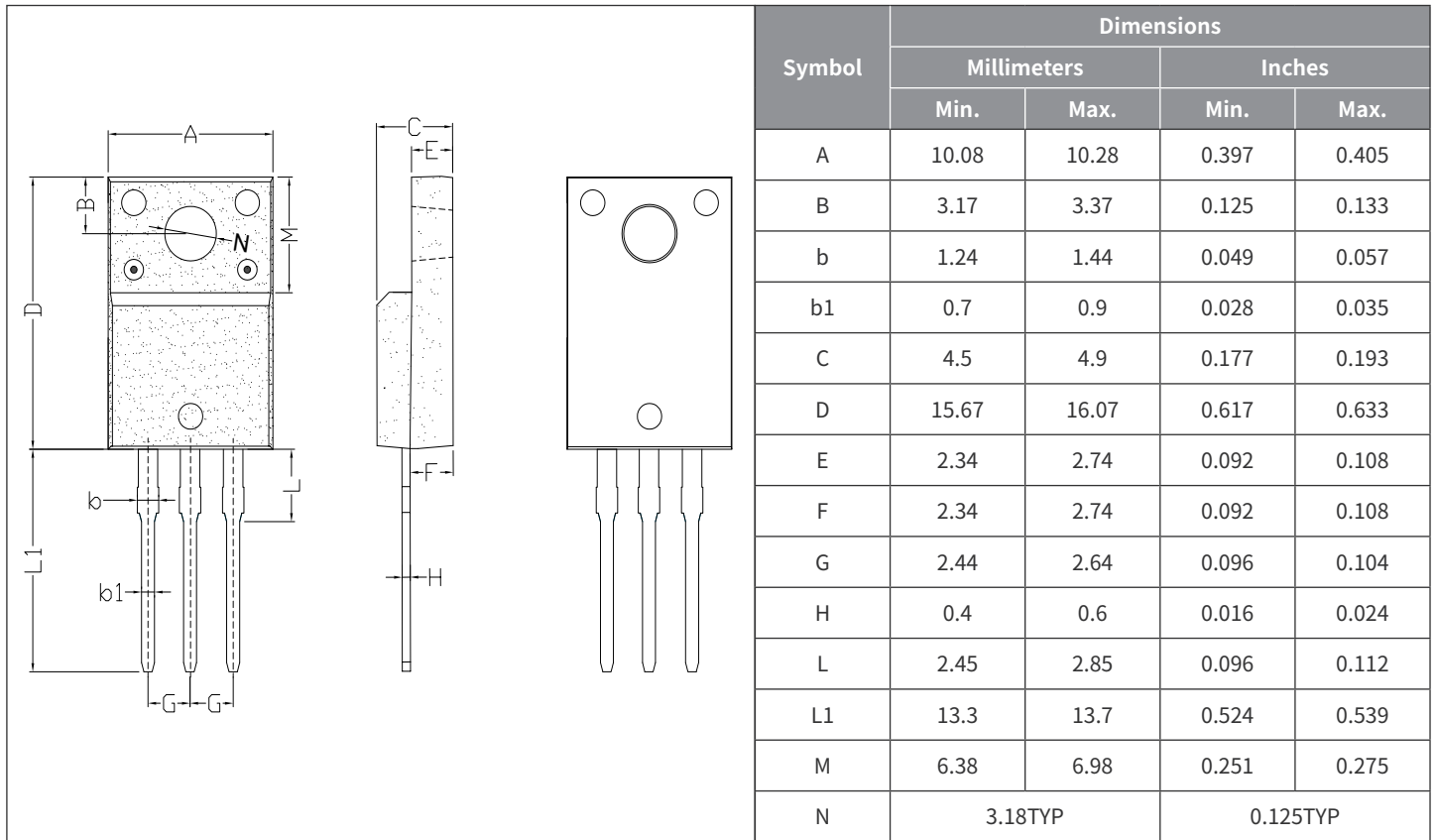
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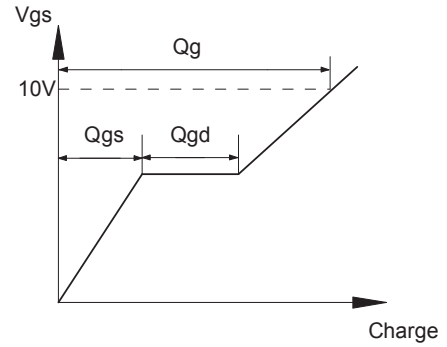
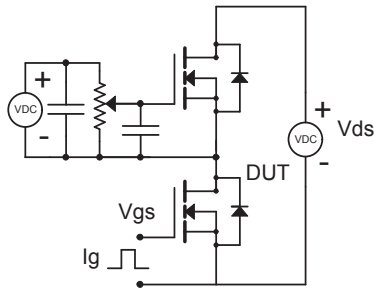
HF65N6H0SJ

N-CHANNEL MOSFET

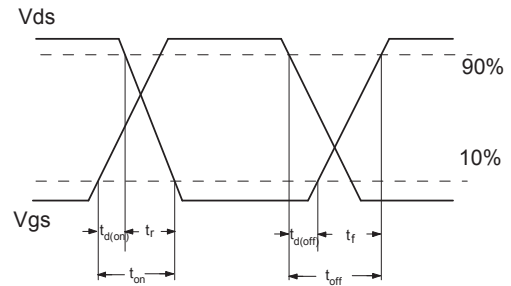
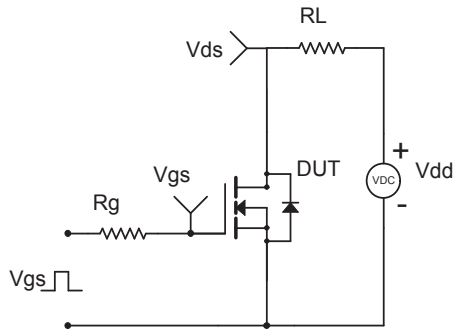
● Package Outline Dimensions (ITO-220AB)



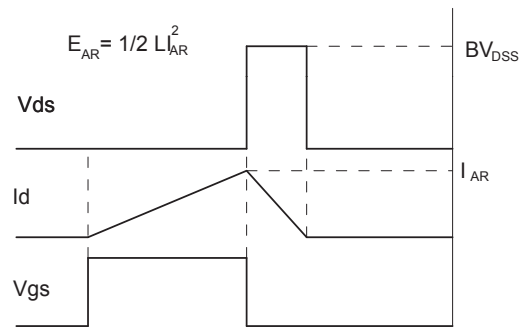
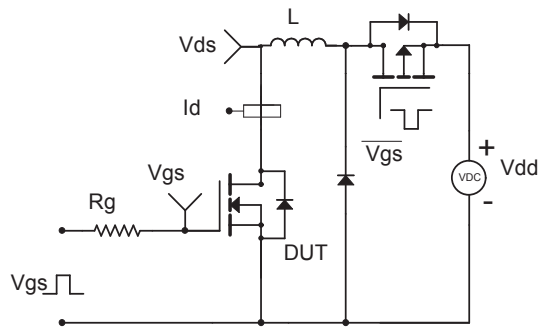
1. Gate Charge Test Circuit & Waveforms



2. Resistive Switching Test Circuit & Waveforms



3. Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



4. Diode Recovery Test Circuit & Waveforms

