

N-CHANNEL MOSFET (75V/80A, $R_{ds}=6.5m\Omega$)

Feathers:

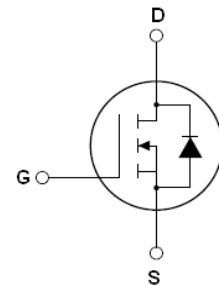
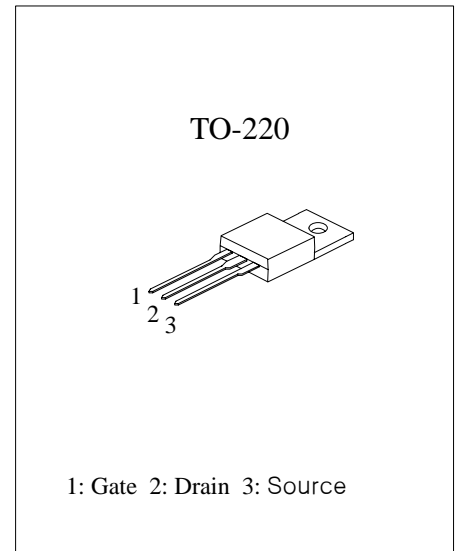
- Advanced trench process technology
- Special designed for Convertors and power controls
- High density cell design for ultra low R_{dson}
- Fully characterized Avalanche voltage and current
- Avalanche Energy 100% test

Description:

The FTK80N08 is a new generation of middle voltage and high current N-Channel enhancement mode trench power MOSFET. This new technology increases the cell density and reduces the on-resistance; its typical R_{dson} can reduce to 6.5mohm.

Application:

- Power switching application



Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	75	V
Drain Current	$I_D(T_C=25^\circ C)$	80	A
Drain Current	$I_D(T_C=100^\circ C)$	72	A
Peak Drain Current	I_{DM}	320	A
Gate-Source Voltage	V_{GSS}	± 20	V
Repetitive Avalanche Energy	E_{AS}	1164	mJ
Repetitive Avalanche Energy	E_{AR}	13.1	mJ
Avalanche Current	I_{AR}	75	A
Total Power Dissipation	$P_D(T_C=25^\circ C)$	165	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$

Thermal Resistance

	Parameter	Min.	Typ.	Max.	Units
$R_{\theta JC}$	Junction-to-case	—	0.83	—	C/W
$R_{\theta JA}$	Junction-to-ambient	—	—	62	

**Electrical Characteristics(Ta=25 °C)**

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	BV_{DSS}	$V_{GS}=0V$	$I_D=250\mu A$	75			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=75V$	$V_{GS}=0V$			1	μA
		$V_{DS}=75V$ $T_C=125^\circ C$	$V_{GS}=0V$			10	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$	$V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$	2		4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$	$I_D=40A$		6.5	8	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=5V$	$I_D=30A$		58		S
Forward On Voltage	V_{SD}	$V_{GS}=0V$	$I_S=40A$			1.3	V
Input Capacitance	C_{iss}	$V_{GS}=0V$ $V_{DS}=25V$	$f=1MHz$		3200		pF
Output Capacitance	C_{oss}				330		pF
Reverse Transfer Capacitance	C_{rss}				260		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=30V$ $R_L=25\Omega$ $R_G=25\Omega$	$I_D=2A$ $V_{GS}=10V$		20		ns
Turn-On Rise Time	t_r				17.8		ns
Turn-Off Delay Time	$t_{d(off)}$				76.8		ns
Turn-Off Fall Time	t_f				15.7		ns

■ TEST CIRCUITS AND WAVEFORMS

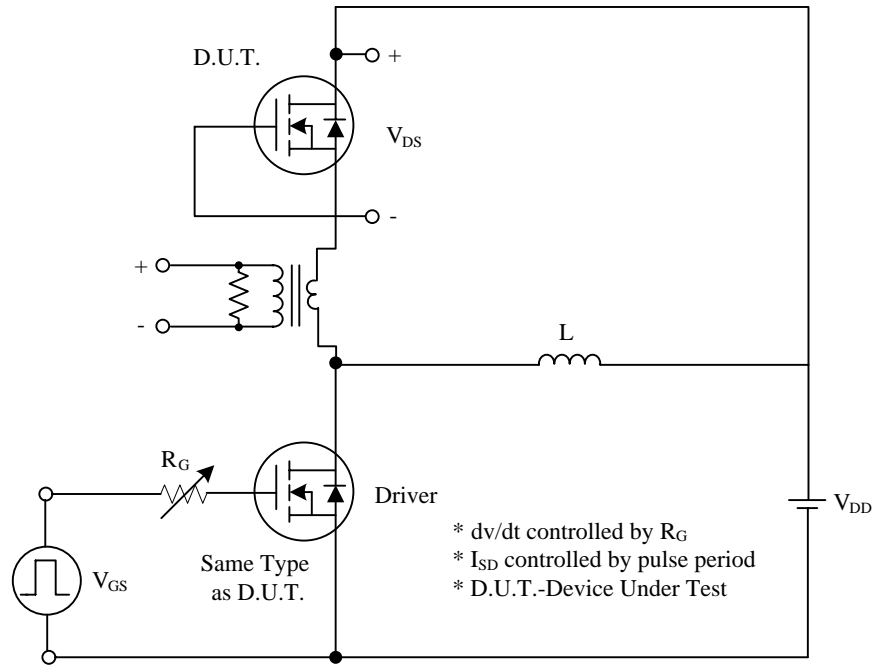


Fig. 1A Peak Diode Recovery dv/dt Test Circuit

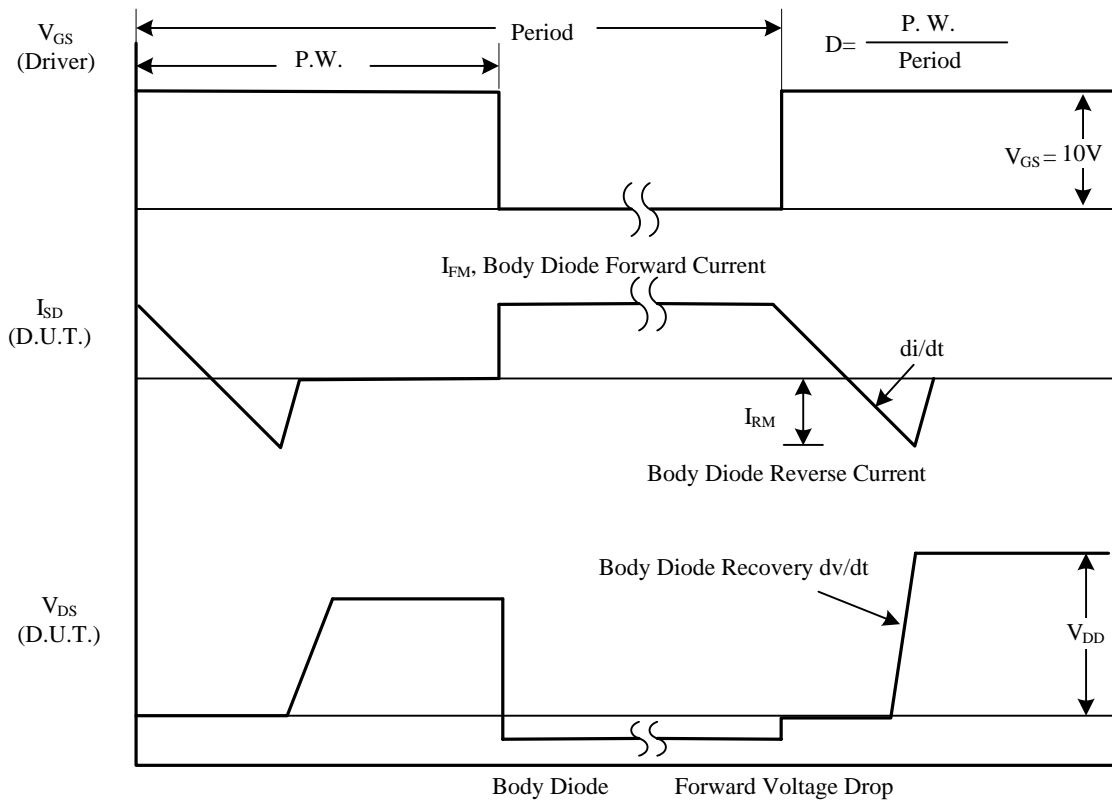


Fig. 1B Peak Diode Recovery dv/dt Waveforms

TEST CIRCUITS AND WAVEFORMS (Cont.)

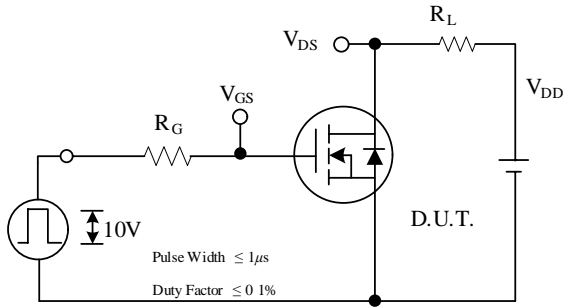


Fig. 2A Switching Test Circuit

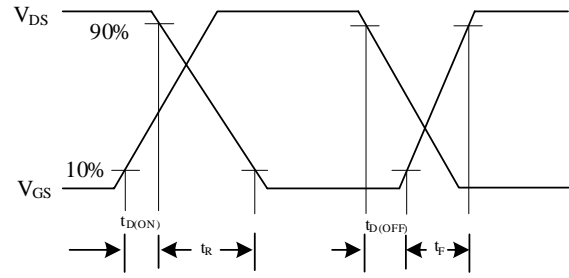


Fig. 2B Switching Waveforms

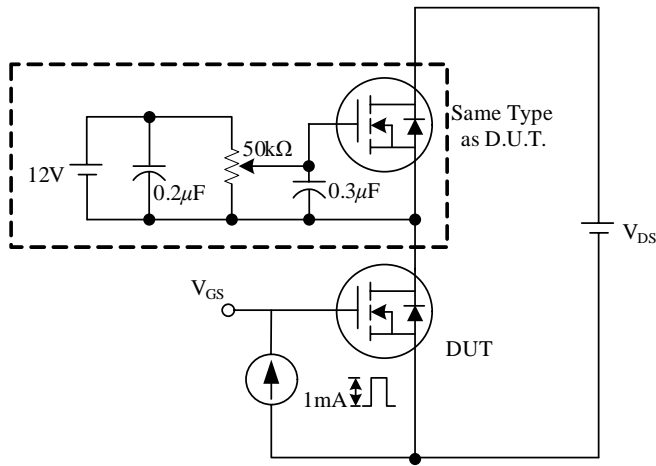


Fig. 3A Gate Charge Test Circuit

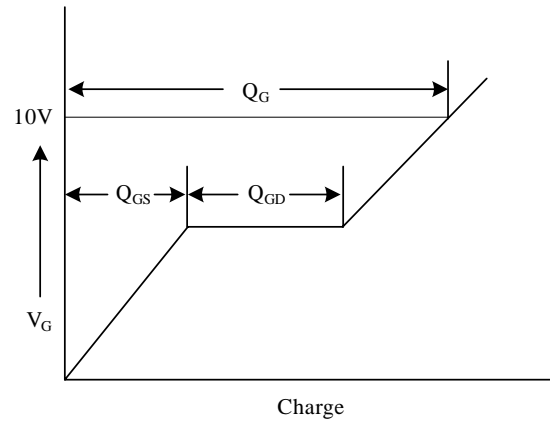


Fig. 3B Gate Charge Waveform

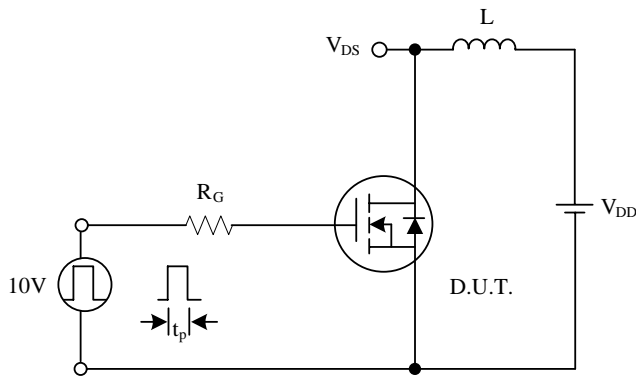


Fig. 4A Unclamped Inductive Switching Test Circuit

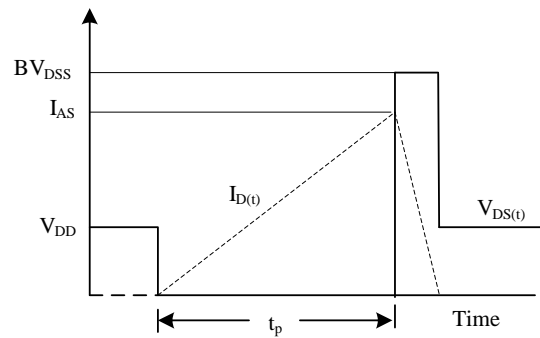
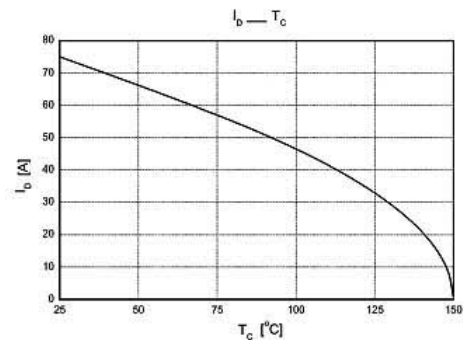
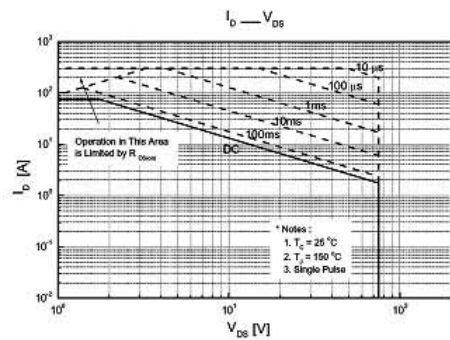
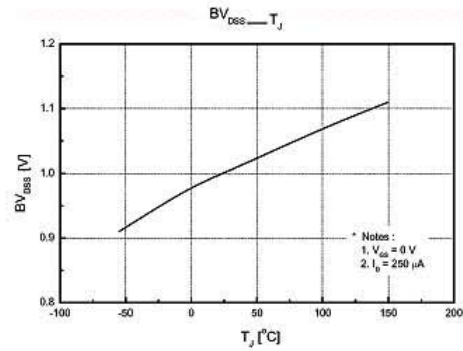
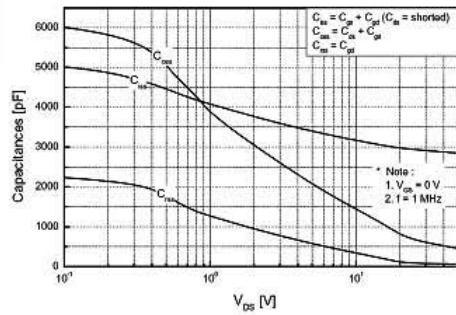
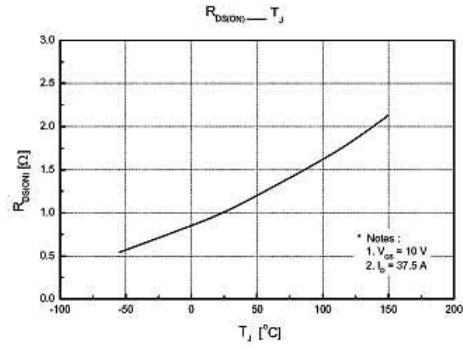
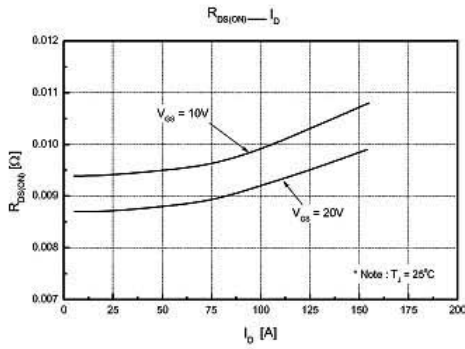
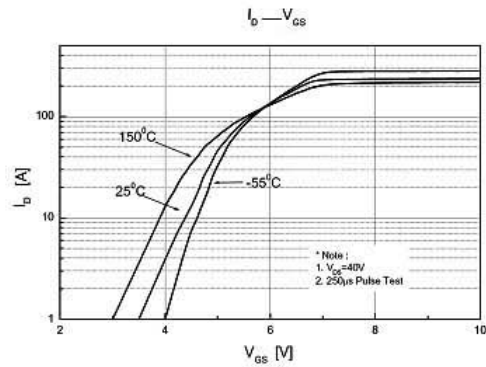
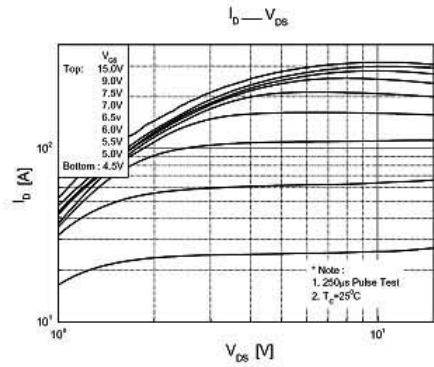


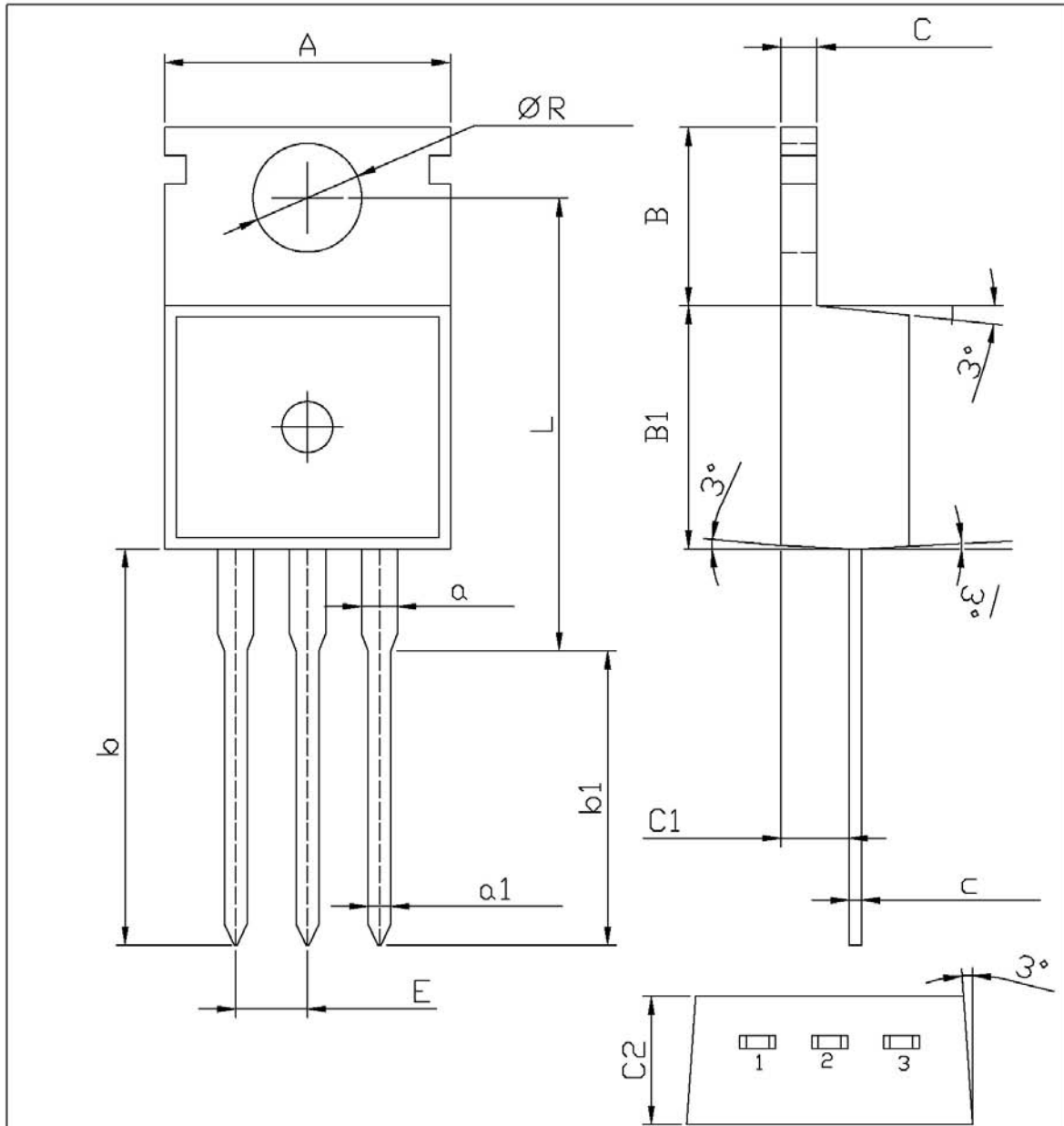
Fig. 4B Unclamped Inductive Switching Waveforms

TYPICAL CHARACTERISTICS



TO-220

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	9.8	10.2	C	1.2	1.4
R	3.56	3.64	B	6.3	6.7
L	15.7	16.1	B1	9.0	9.4
b	12.6	13.6	C1	2.2	2.6
b1	9.6	10.6	a1	0.7	0.9
a	1.22	1.32	c	0.4	0.6
E	2.34	2.74	C2	4.3	4.7