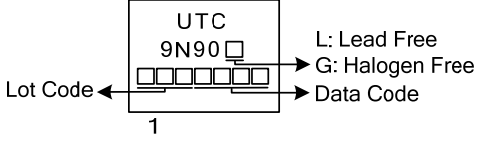




MARKING



FLYING 汎翔國際有限公司  
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■ ABSOLUTE MAXIMUM RATINGS ( $T_C = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		$V_{DSS}$	900	V
Gate-Source Voltage		$V_{GSS}$	$\pm 30$	V
Drain Current	Continuous	$I_D$	9	A
	Pulsed (Note 2)	$I_{DM}$	36	A
Avalanche Energy	Single Pulsed (Note 3)	$E_{AS}$	1597	mJ
Peak Diode Recovery dv/dt (Note 4)		dv/dt	1.6	V/ns
Power Dissipation		$P_D$	58	W
Junction Temperature		$T_J$	+150	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-55 ~ +150	$^\circ\text{C}$

- Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.  
 2. Repetitive Rating: Pulse width limited by maximum junction temperature.  
 3.  $L = 79\text{mH}$ ,  $I_{AS} = 6.36\text{A}$ ,  $V_{DD} = 50\text{V}$ ,  $R_G = 25\ \Omega$  Starting  $T_J = 25^\circ\text{C}$   
 4.  $I_{SD} \leq 9.0\text{A}$ ,  $di/dt \leq 200\text{A}/\mu\text{s}$ ,  $V_{DD} \leq BV_{DSS}$ , Starting  $T_J = 25^\circ\text{C}$

■ THERMAL DATA

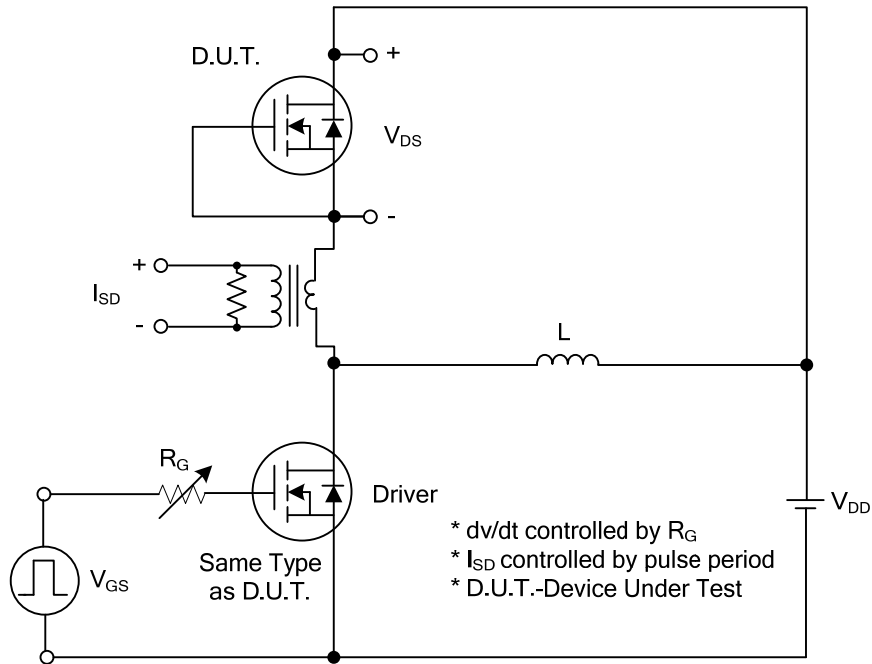
PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	$\theta_{JA}$	62.5	$^\circ\text{C}/\text{W}$
Junction to Case	$\theta_{JC}$	2.15	$^\circ\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)

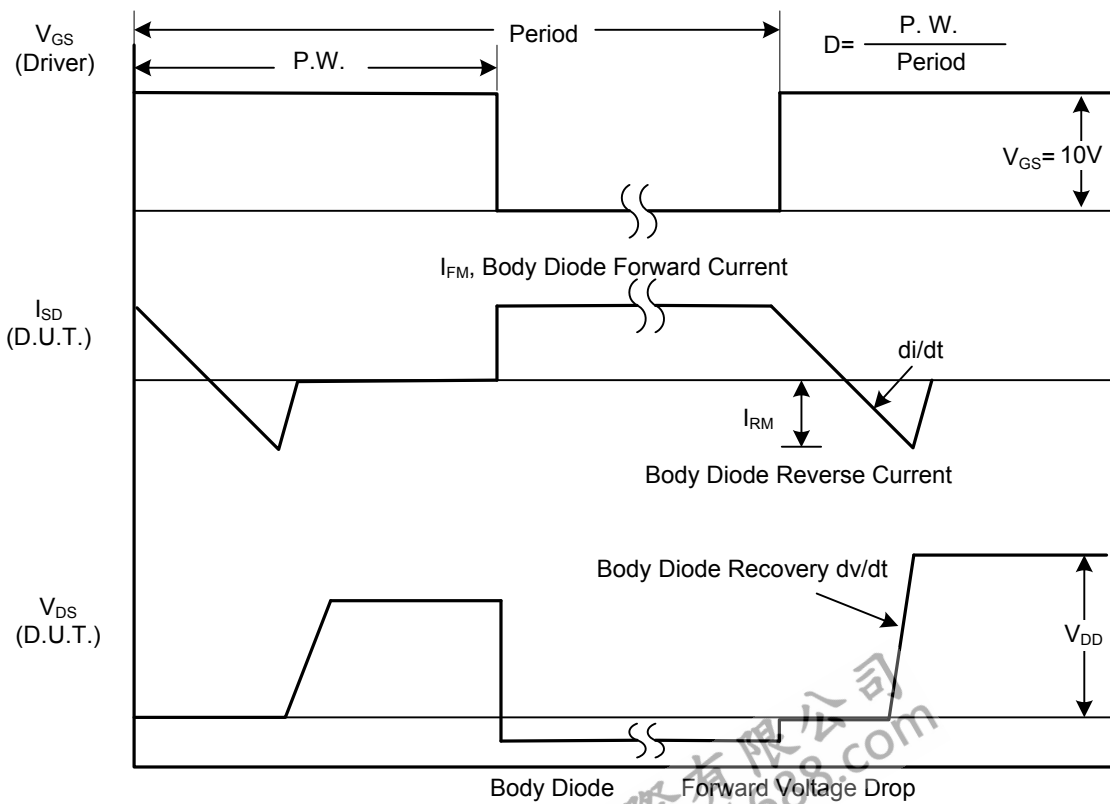
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0\text{V}$ , $I_D=250\mu\text{A}$	900			V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=900\text{V}$ , $V_{GS}=0\text{V}$			1	$\mu\text{A}$
Gate-Source Leakage Current	Forward	$I_{GSS}$			100	nA
	Reverse				-100	nA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$ , $I_D=250\mu\text{A}$	2.0		4.0	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10\text{V}$ , $I_D=4.5\text{A}$			1.3	$\Omega$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{ISS}$	$V_{GS}=0\text{V}$ , $V_{DS}=25\text{V}$ , $f=1.0\text{MHz}$		1912		pF
Output Capacitance	$C_{OSS}$			257		pF
Reverse Transfer Capacitance	$C_{RSS}$			50		pF
<b>SWITCHING CHARACTERISTICS</b>						
Total Gate Charge (Note 1)	$Q_G$	$V_{DS}=180\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=9.0\text{A}$ , $I_G=1\text{mA}$ (Note 1, 2)		67.5		nC
Gate to Source Charge	$Q_{GS}$			19		nC
Gate to Drain Charge	$Q_{GD}$			29		nC
Turn-ON Delay Time (Note 1)	$t_{D(ON)}$	$V_{DD}=30\text{V}$ , $V_{GS}=10\text{V}$ , $I_D=9.0\text{A}$ , $R_G=25\ \Omega$ (Note 1, 2)		37		ns
Rise Time	$t_R$			97		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			203		ns
Fall-Time	$t_F$			62		ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Maximum Body-Diode Continuous Current	$I_S$				9	A
Maximum Body-Diode Pulsed Current	$I_{SM}$				36	A
Drain-Source Diode Forward Voltage (Note 1)	$V_{SD}$	$I_S=9.0\text{A}$ , $V_{GS}=0\text{V}$			1.4	V
Body Diode Reverse Recovery Time (Note 1)	$t_{rr}$	$I_S=9.0\text{A}$ , $V_{GS}=0\text{V}$		685		ns
Body Diode Reverse Recovery Charge	$Q_{rr}$	$di/dt=100\text{A}/\mu\text{s}$		9.36		$\mu\text{C}$

- Notes: 1. Pulse Test : Pulse width  $\leq 300\mu\text{s}$ , Duty cycle  $\leq 2\%$ .  
 2. Essentially independent of operating temperature.

TEST CIRCUITS AND WAVEFORMS

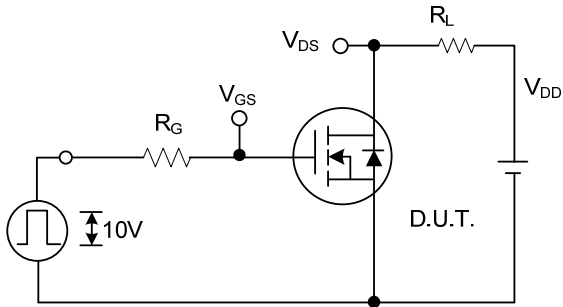


Peak Diode Recovery  $dv/dt$  Test Circuit

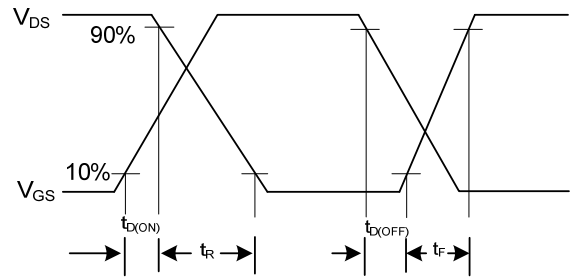


Peak Diode Recovery  $dv/dt$  Waveforms

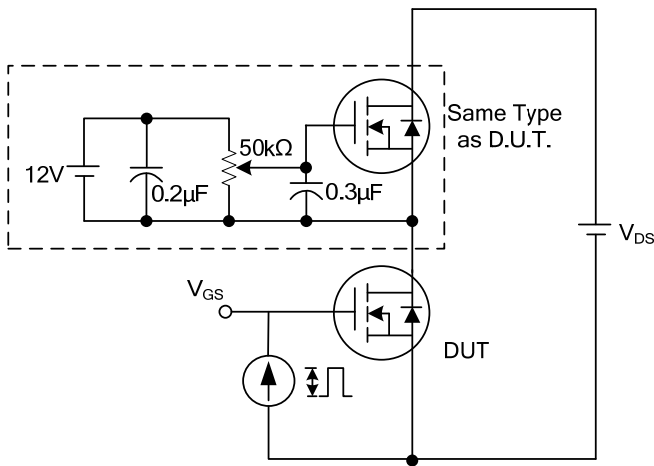
■ TEST CIRCUITS AND WAVEFORMS (Cont.)



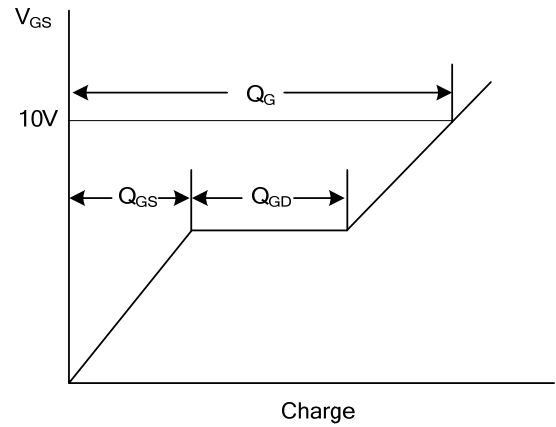
Switching Test Circuit



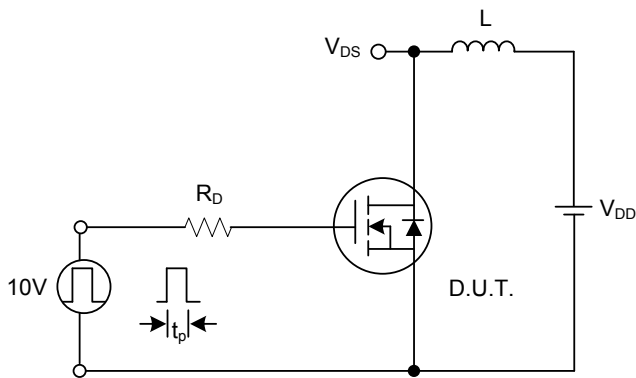
Switching Waveforms



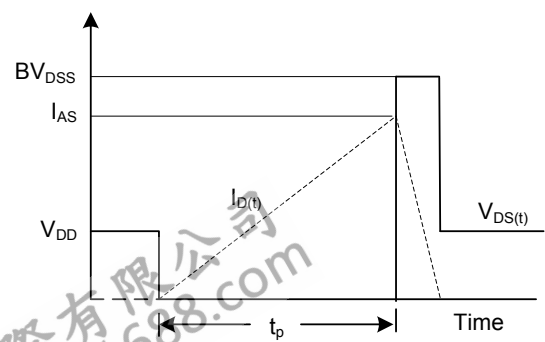
Gate Charge Test Circuit



Gate Charge Waveform



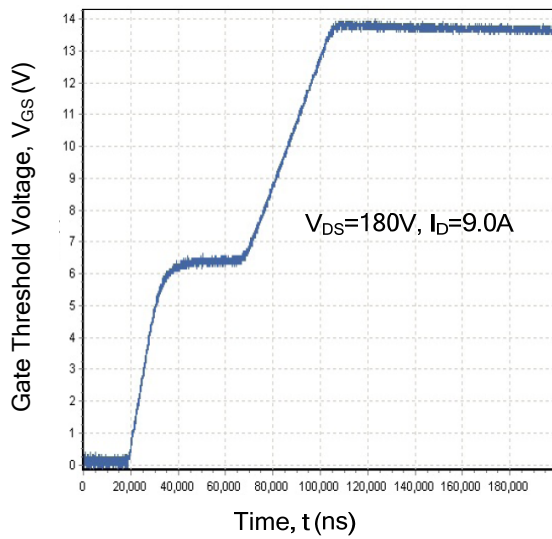
Unclamped Inductive Switching Test Circuit



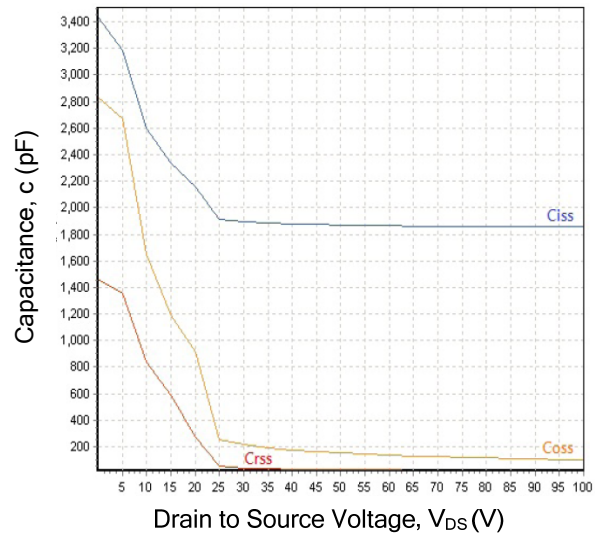
Unclamped Inductive Switching Waveforms

### TYPICAL CHARACTERISTICS

Gate-Charge Characteristics



Capacitance Characteristics



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