



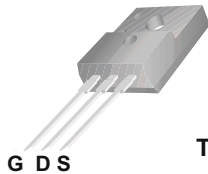
# FHF10N80

## 产品描述

10N80为N沟道增强型高压功率MOS场效应管。该产品广泛适用于AC-DC开关电源，DC-DC电源转换器，高压H桥PMW马达驱动。

## 产品特点

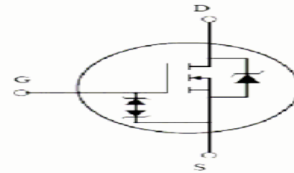
10A, 800V,  $R_{DS(on)} = 0.72 \Omega$  (typ) @  $V_{GS} = 10 V$   
 低电荷、低反向传输电容  
 开关速度快



TO-220F



Inner Equivalent Principium Chart



## 极限值 (TC=25°C)

参数名称	符号	FHF10N80	单位
漏-源电压	$V_{DS}$	800	V
漏极直流电流	$I_D$	10	A
漏极直流电流@ $T_c=100^\circ C$		7	A
最大脉冲漏极电流	$I_{DM}$	40	A
栅-源电压	$V_{GS}$	$\pm 30$	V
耗散功率	$P_D$	60	W
超过25°C时的降额因子		0.48	W/°C
结温和存储温度	$T_J, T_{stg}$	150, -55~150	°C
最高焊接温度	$T_L$	300	°C
单脉冲雪崩击穿能量	$E_{AS}$	997	mJ
重复脉冲雪崩击穿能量	$E_{AR}$	40	mJ
二极管正向电流	$I_S$	10	A

## 特性参数值 (TC=25°C)

参数说明	符号	测试条件	最小值	典型值	最大值	单位
漏-源击穿电压	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	800	--	--	V
电压温度系数	$\Delta BV_{DSS}/\Delta T_J$	$I_D=250\mu A$ , 参考25°C	--	0.5	--	V/°C
漏源截止电流	$I_{DSS}$	$V_{DS}=800V, V_{GS}=0V$	--	--	1	$\mu A$
栅源截止电流	$I_{GSS(F/R)}$	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	$\pm 1$	$\mu A$
通态电阻	$R_{DS(ON)}$	$V_{GS}=10V, I_D=5A$	--	0.72	0.9	$\Omega$
栅源极开启电压	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	--	4.0	V
跨 导	$g_{FS}$	$I_D=15A, V_{DS}=10V$	--	20	--	S

## 开关特性

参数说明	符号	测试条件	最小值	典型值	最大值	单位
栅极电荷	$Q_g$	$V_{DS}=640V$ $I_D=10A$ $V_{GS}=10V$	--	65	--	nC
栅源电荷	$Q_{gs}$		--	13	--	nC
栅漏电荷	$Q_{gd}$		--	25	--	nC
延迟时间(开启)	$T_d(on)$	$V_{DD}=400V$ $I_D=10A$ $R_G=4.7\Omega$ $V_{GS}=10V$	--	19	--	ns
上升时间	$T_r$		--	10	--	ns
延迟时间	$T_d(off)$		--	68	--	ns
下降时间	$T_f$		--	23	--	ns

## 动态特性

参数说明	符号	测试条件	最小值	典型值	最大值	单位
输入电容	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	--	2900	--	pF
输出电容	$C_{oss}$	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	--	200	--	pF
反向传输电容	$C_{rss}$	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$	--	25	--	pF

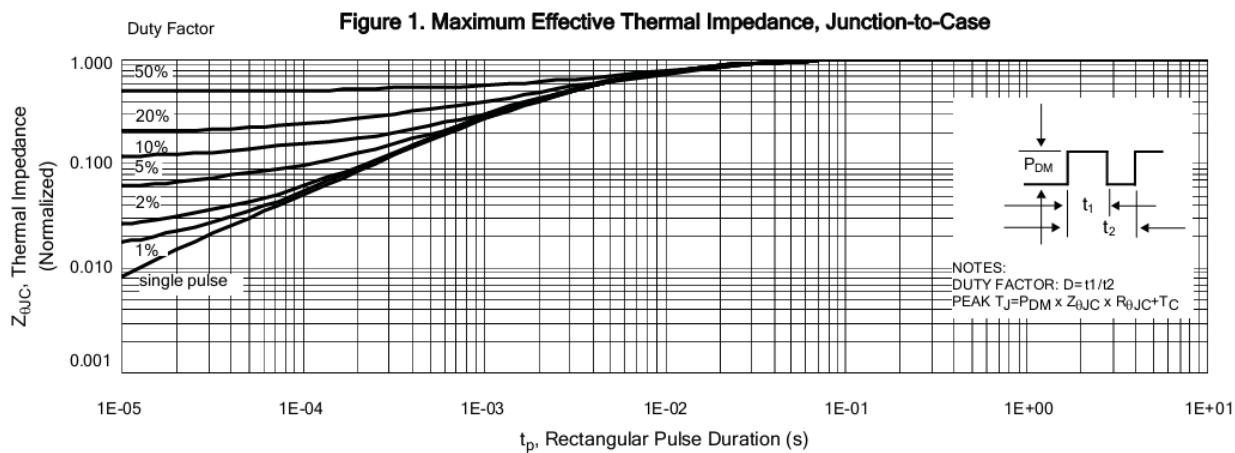
## 漏-源二极管特性

参数说明	符号	测试条件	最小值	典型值	最大值	单位
源极电流	Is	--	--	--	10	A
源漏二极管正向压降	VSD	VGS=0V, Is=10A	--	--	1.5	V
反向恢复时间	trr	VGS=0V, Is=9A	--	200	--	ns
反向恢复电荷	Qrr	diF/dt=100A/us	--	2.2	--	μC

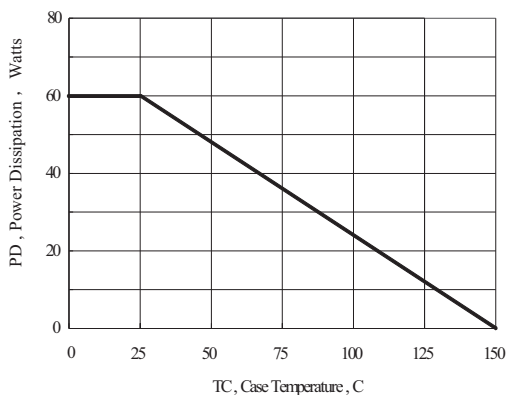
## 热阻特性

参数说明	符号	最大值	单位
结到壳的热阻	R <sub>θJC</sub>	2.08	°C/W
结到环境的热阻	R <sub>θJA</sub>	100	°C/W

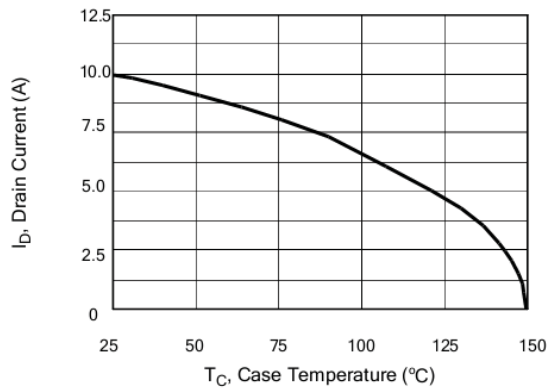
# 典型特性曲线



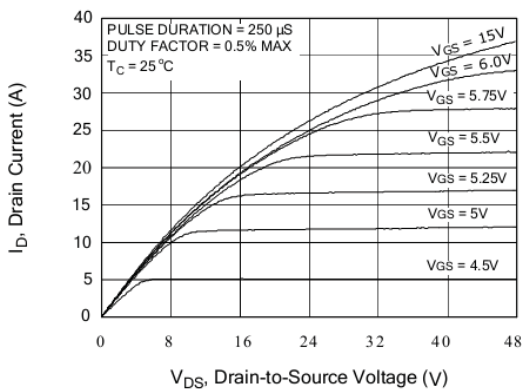
**Figure 2. Maximum Power Dissipation vs Case Temperature**



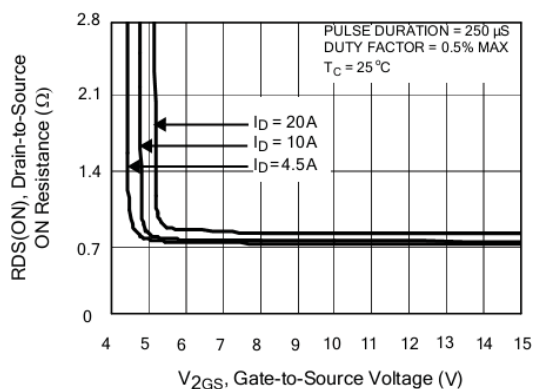
**Figure 3. Maximum Continuous Drain Current vs Case Temperature**



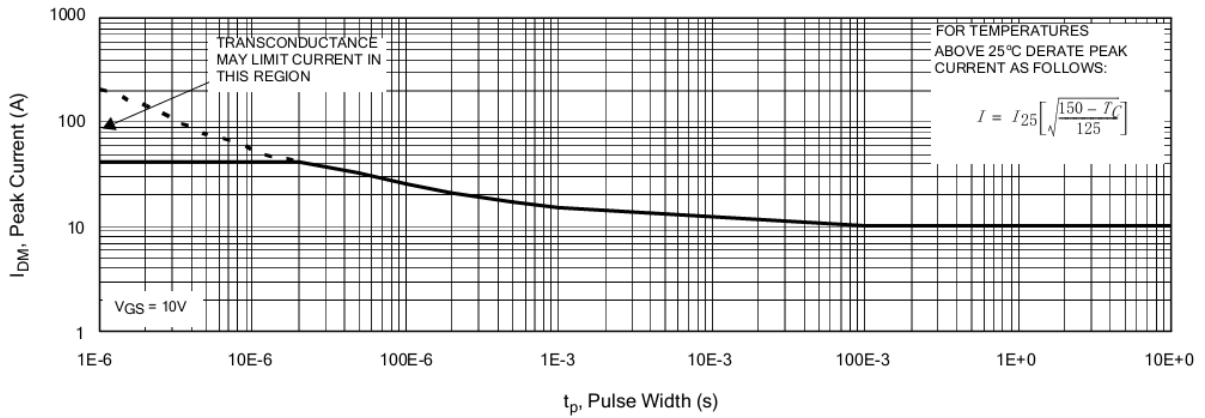
**Figure 4. Typical Output Characteristics**



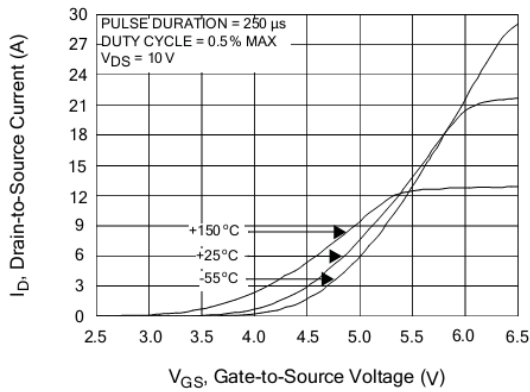
**Figure 5. Typical Drain-to-Source ON Resistance vs Gate Voltage and Drain Current**



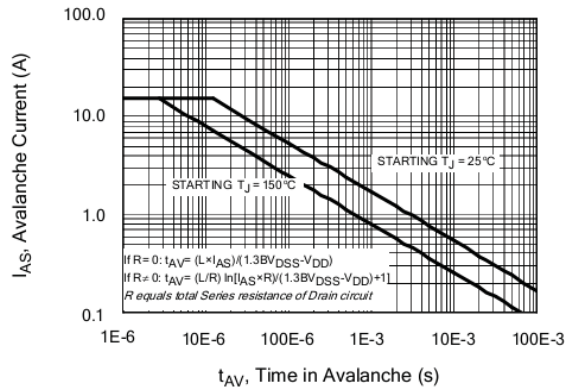
**Figure 6. Maximum Peak Current Capability**



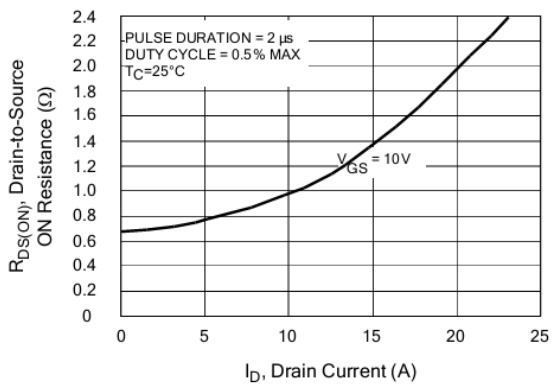
**Figure 7. Typical Transfer Characteristics**



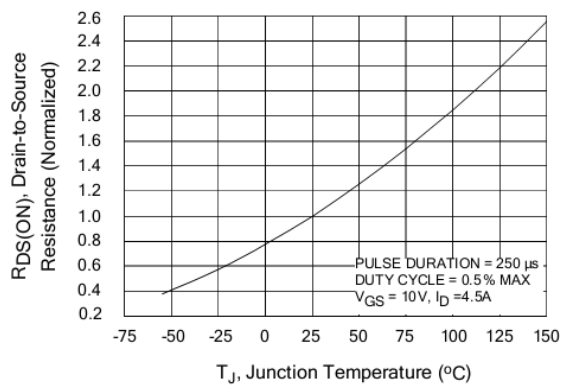
**Figure 8. Unclamped Inductive Switching Capability**



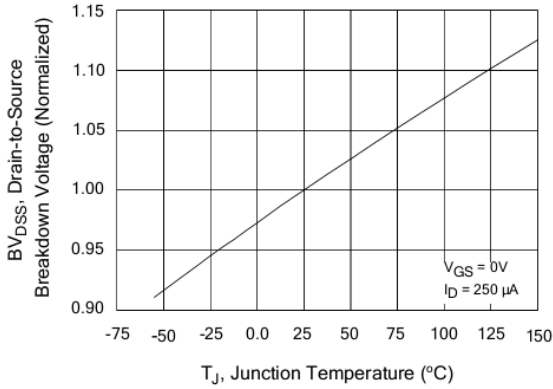
**Figure 9. Typical Drain-to-Source ON Resistance vs Drain Current**



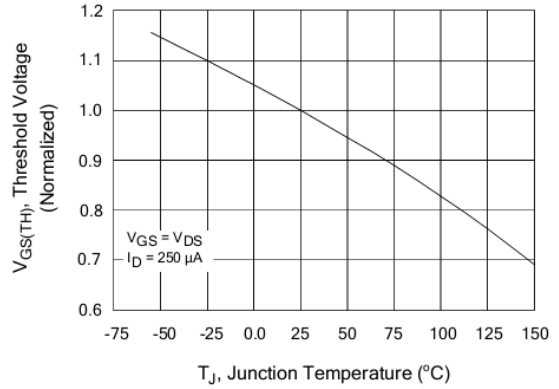
**Figure 10. Typical Drain-to-Source ON Resistance vs Junction Temperature**



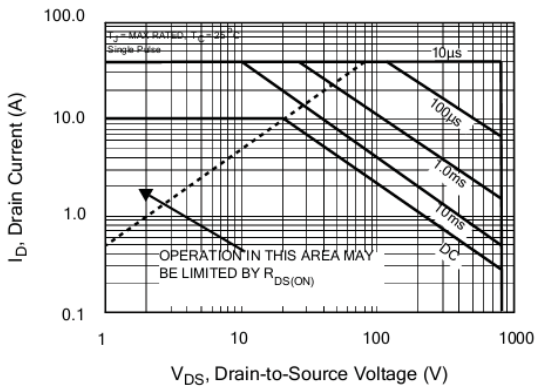
**Figure 11. Typical Breakdown Voltage vs Junction Temperature**



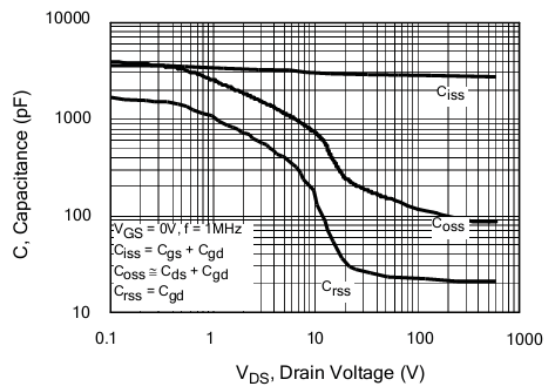
**Figure 12. Typical Threshold Voltage vs Junction Temperature**



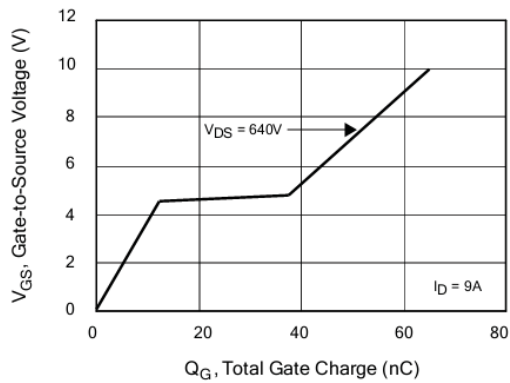
**Figure 13. Maximum Forward Bias Safe Operating Area**



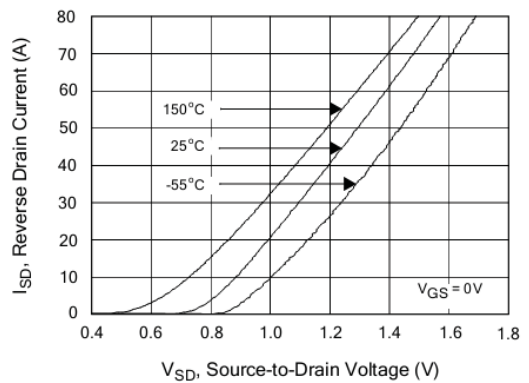
**Figure 14. Typical Capacitance vs Drain-to-Source Voltage**



**Figure 15. Typical Gate Charge vs Gate-to-Source Voltage**



**Figure 16. Typical Body Diode Transfer Characteristics**



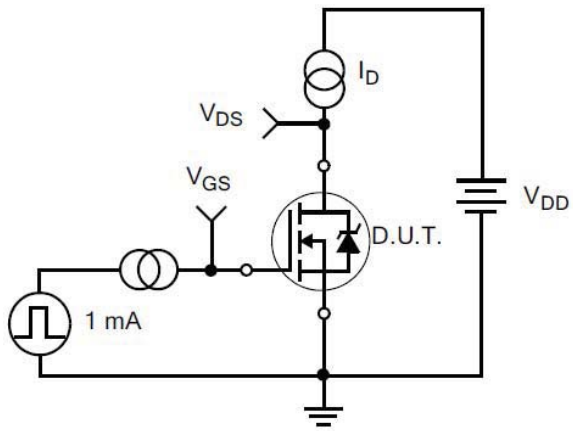


Figure 17. Gate Charge Test Circuit

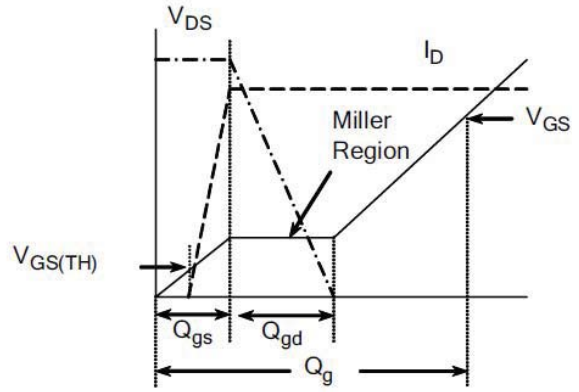


Figure 18. Gate Charge Waveform

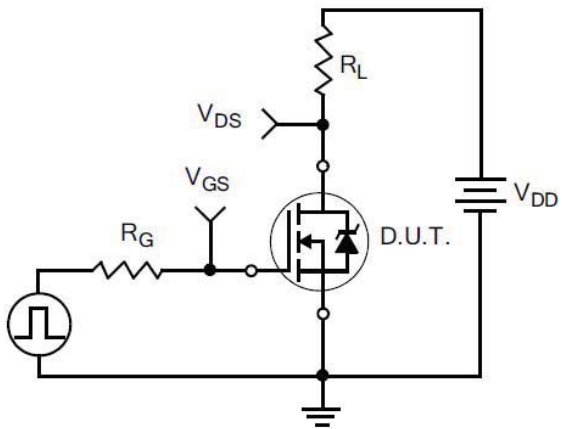


Figure 19. Resistive Switching Test Circuit

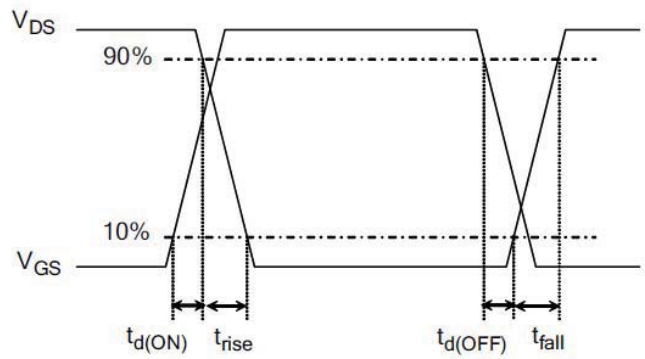


Figure 20. Resistive Switching Waveforms

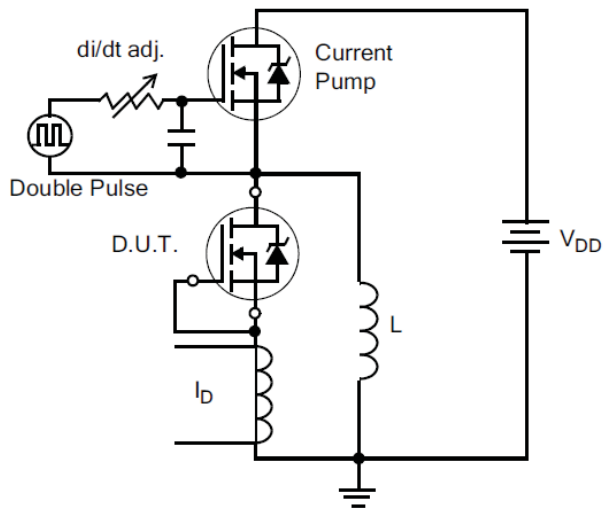


Figure 21. Diode Reverse Recovery Test Circuit

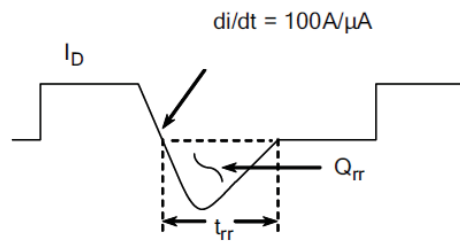


Figure 22. Diode Reverse Recovery Waveform

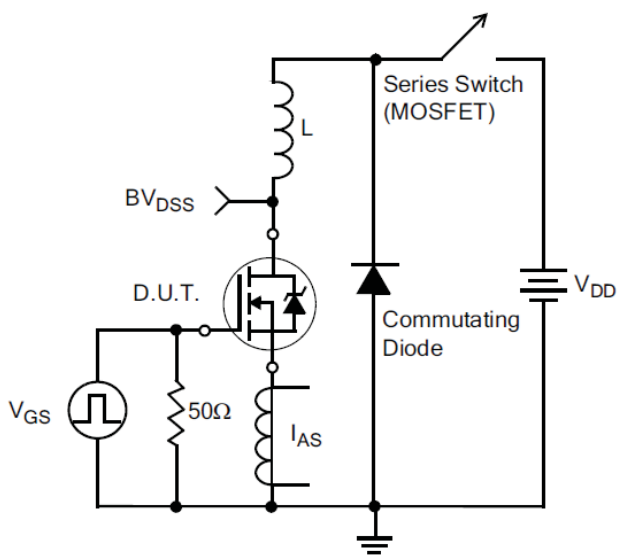


Figure 23. Unclamped Inductive Switching Test Circuit

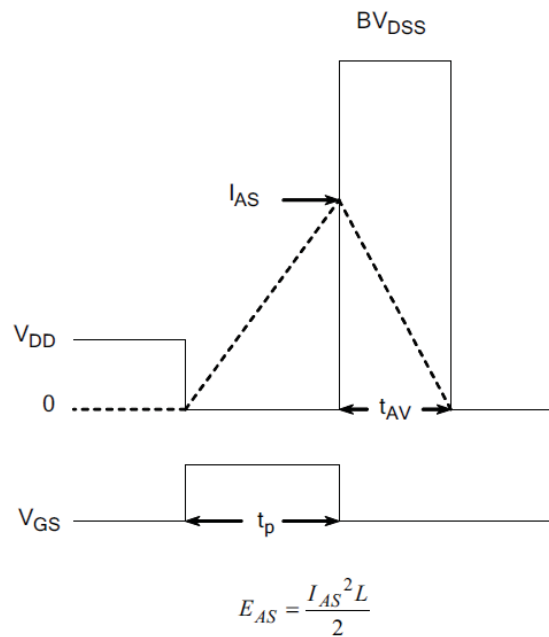
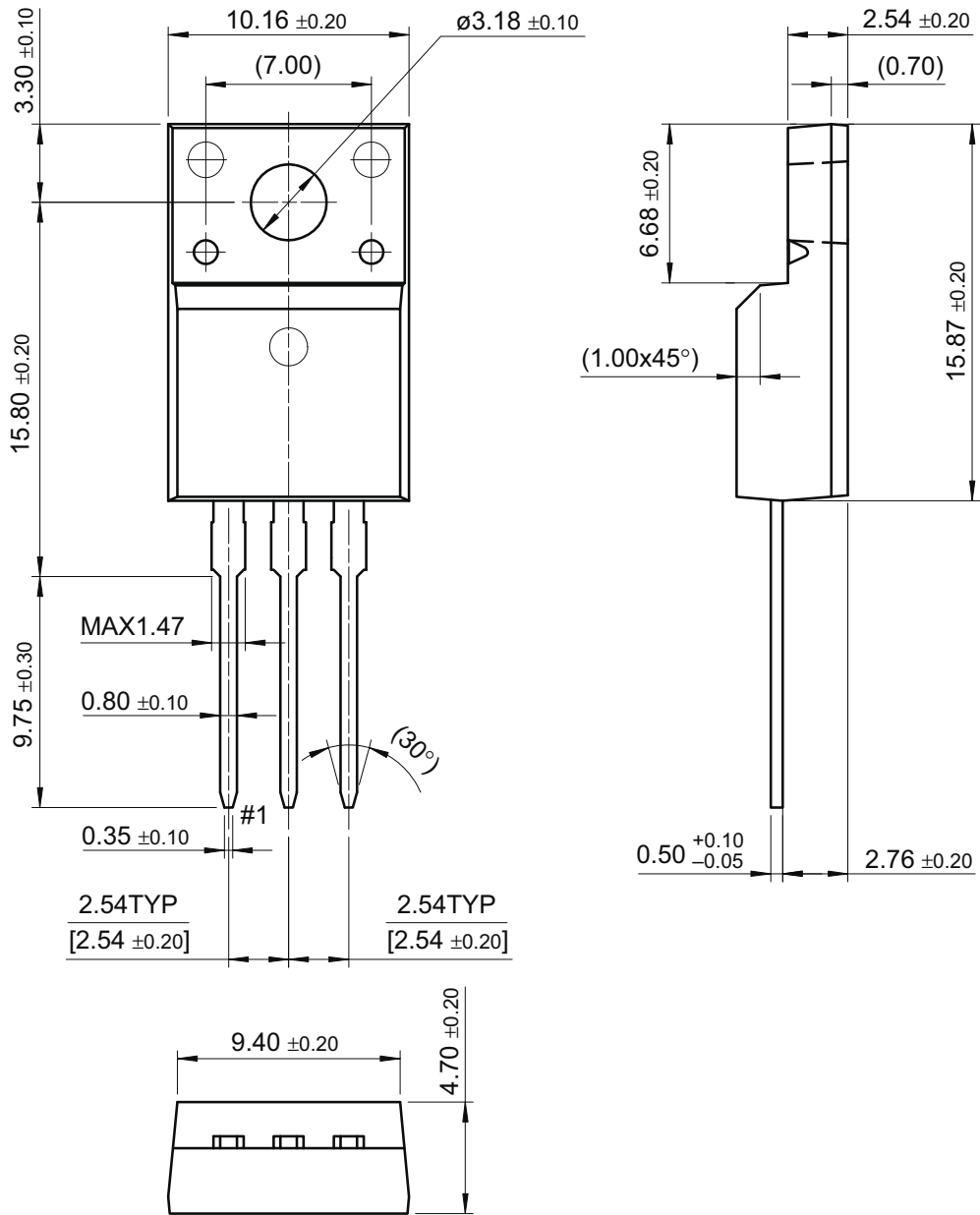


Figure 24. Unclamped Inductive Switching Waveforms



外形尺寸

TO-220F



尺寸单位:毫米