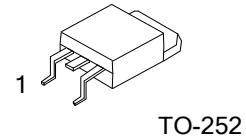
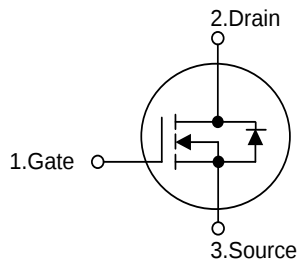


**5N55-ML***Power MOSFET***5A, 550V N-CHANNEL
POWER MOSFET****DESCRIPTION**

The UTC **5N55-ML** is a N-Channel enhancement mode silicon gate power MOSFET is designed high voltage, high speed power switching applications such as switching regulators, switching converters, solenoid, motor drivers, relay drivers.

FEATURES

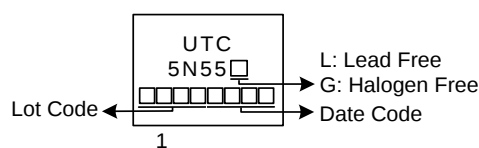
- * $R_{DS(ON)} \leq 1.8 \Omega$ @ $V_{GS}=10V$, $I_D=2.5A$
- * Single Pulse Avalanche Energy Rated
- * Rugged- SOA is Power Dissipation Limited
- * Fast Switching Speeds
- * Linear Transfer Characteristics
- * High Input Impedance

SYMBOL**ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
5N55L-TN3-R	5N55G-TN3-R	TO-252	G	D	S	Tape Reel

Note: Pin Assignment: G: Gate D: Drain S: Source

5N55G-TN3-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) TN3: TO-252 (3) G: Halogen Free and Lead Free, L: Lead Free
--	---

MARKING

■ ABSOLUTE MAXIMUM RATINGS (T_C=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V _{DSS}	550	V
Gate-Source Voltage	V _{GSS}	±30	V
Continuous Drain Current	I _D	5	A
Pulsed Drain Current (Note 2)	I _{DM}	10	A
Avalanche Energy	Single Pulsed (Note 3)	E _{AS}	122
Peak Diode Recovery dv/dt (Note 4)			
Power Dissipation	P _D	49	W
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°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 = 10mH, I_{AS} = 4.94A, V_{DD} = 50V, R_G = 25 Ω, Starting T_J = 25°C

4. I_{SD} ≤ 5.0A, di/dt ≤ 200A/μs, V_{DD} ≤ BV_{DSS}, Starting T_J = 25°C

■ THERMAL DATA

PARAMETER	SYMBOL	RATING	UNIT
Junction to Ambient	θ _{JA}	110	°C/W
Junction to Case	θ _{JC}	2.55 (Note)	°C/W

Note: Device mounted on FR-4 substrate P_C board, 2oz copper, with 1inch square copper plate.

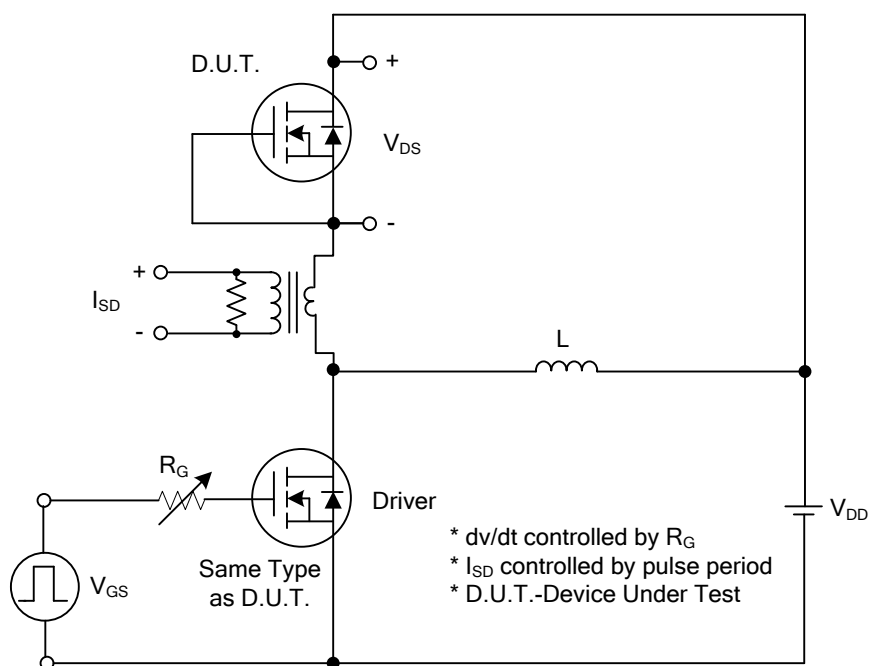
■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV _{DSS}	V _{GS} =0V, I _D =250μA	550			V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =550V, V _{GS} =0V			10	μA
Gate- Source Leakage Current	Forward	I _{GSS}	V _{GS} =30V, V _{DS} =0V			100	nA
	Reverse		V _{GS} =-30V, V _{DS} =0V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	2.0		4.0	V
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =2.5A			1.8	Ω
DYNAMIC CHARACTERISTICS							
Input Capacitance		C _{ISS}	V _{DS} =25V, V _{GS} =0V, f=1.0MHz		570		pF
Output Capacitance		C _{OSS}			59		pF
Reverse Transfer Capacitance		C _{RSS}			3.3		pF
SWITCHING CHARACTERISTICS							
Total Gate Charge (Note 1)		Q _G	V _{DS} =400V, V _{GS} =10V, I _D =2.5A I _G =1mA (Note 1, 2)		17.3		nC
Gate-Source Charge		Q _{GS}			7		nC
Gate-Drain Charge		Q _{GD}			2.3		nC
Turn-On Delay Time (Note 1)		t _{D(ON)}	V _{DS} =100V, V _{GS} =10V, I _D =5A, R _G =25Ω (Note 1, 2)		7.5		ns
Turn-On Rise Time		t _R			14.5		ns
Turn-Off Delay Time		t _{D(OFF)}			32		ns
Turn-Off Fall Time		t _F			21		ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS							
Maximum Body-Diode Continuous Current		I _S				5	A
Maximum Body-Diode Pulsed Current		I _{SM}				10	A
Drain-Source Diode Forward Voltage (Note 1)		V _{SD}	I _S =5A , V _{GS} =0V			1.4	V
Reverse Recovery Time (Note 1)		t _{rr}	I _S =5A , V _{GS} =0V		230		ns
Reverse Recovery Charge		Q _{rr}	di/dt=100A/μs		3.668		μC

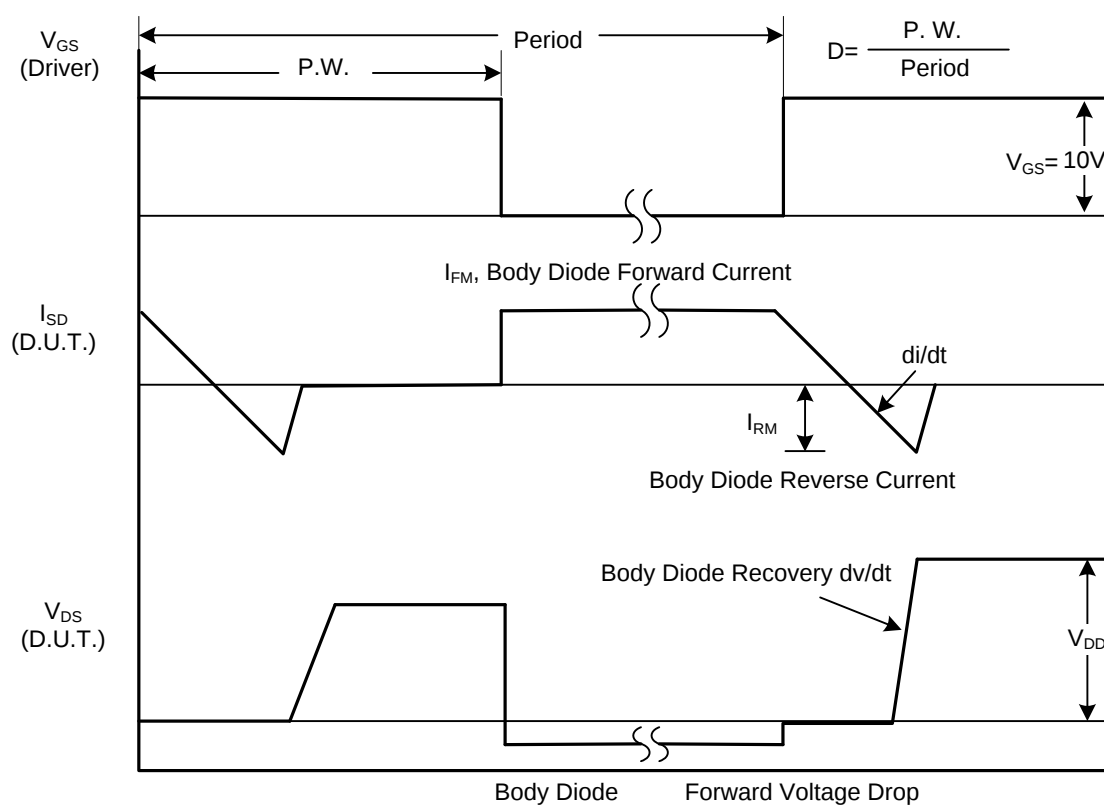
Notes: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.

2. Essentially independent of operating temperature.

■ TEST CIRCUITS AND WAVEFORMS

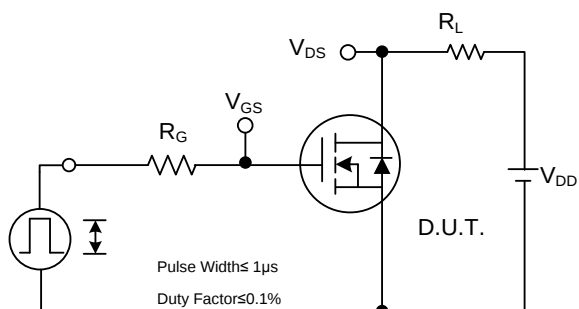


Peak Diode Recovery dv/dt Test Circuit

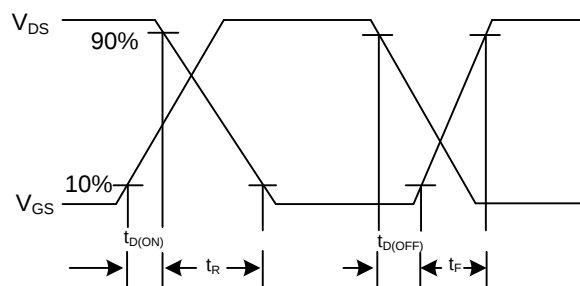


Peak Diode Recovery dv/dt Waveforms

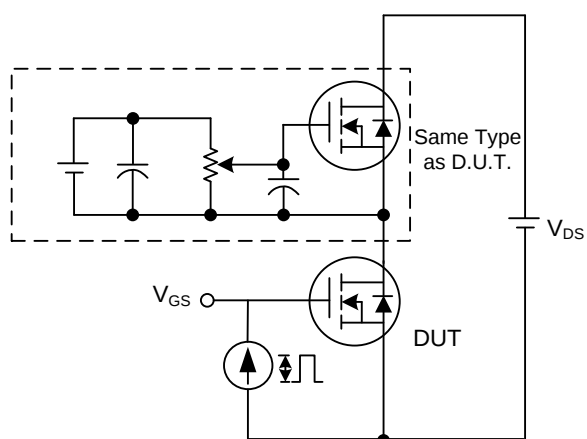
■ TEST CIRCUITS AND WAVEFORMS



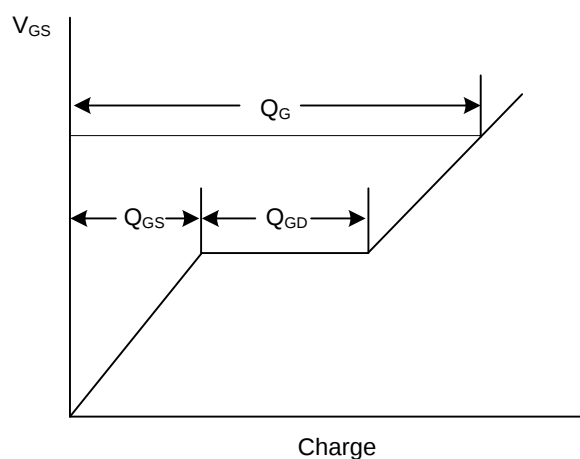
Switching Test Circuit



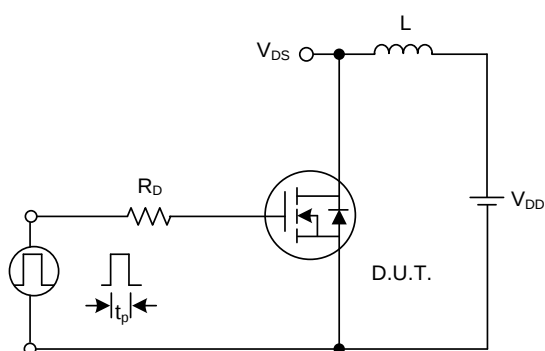
Switching Waveforms



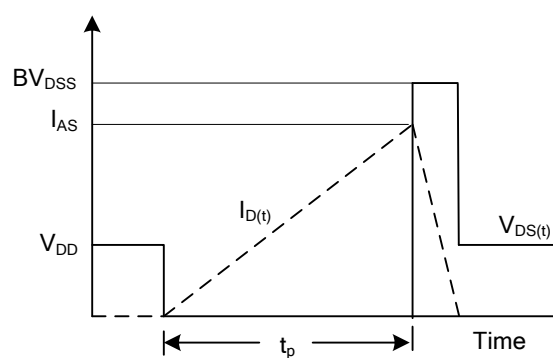
Gate Charge Test Circuit



Gate Charge Waveform

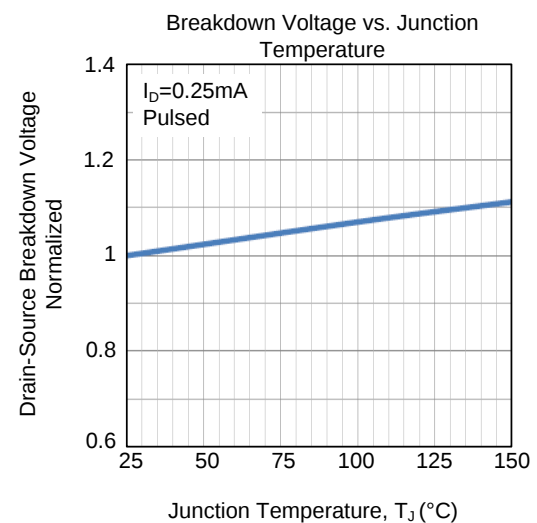
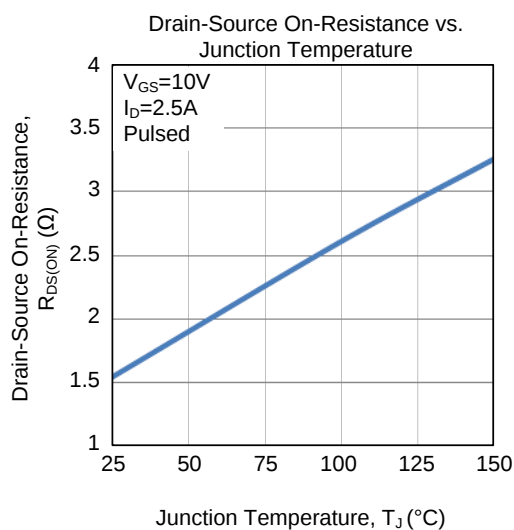
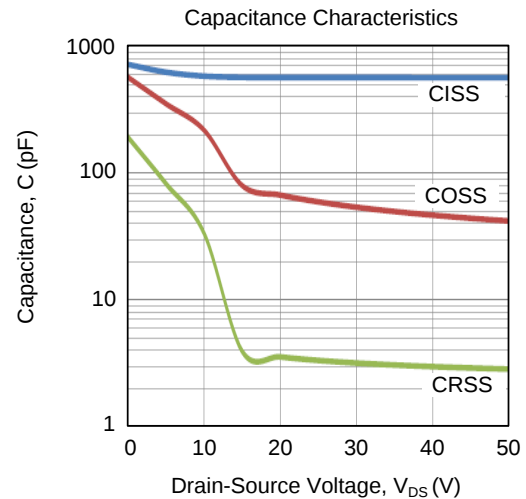
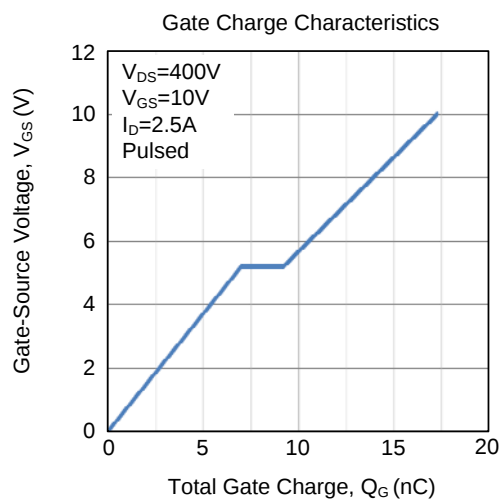
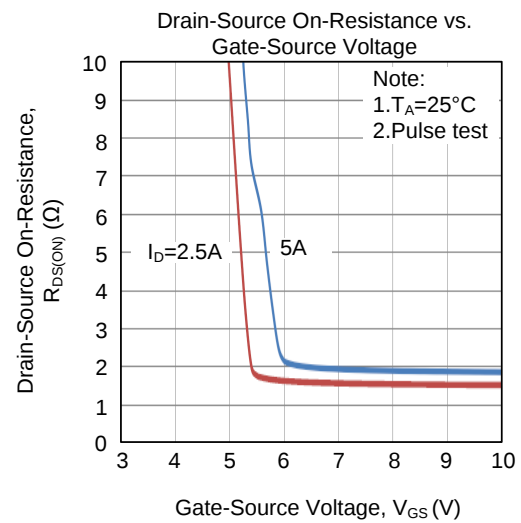
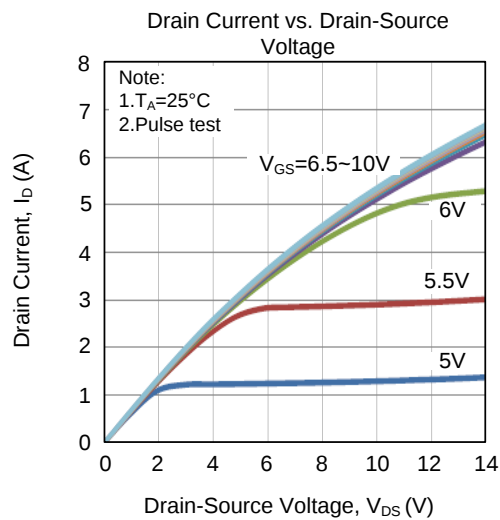


Unclamped Inductive Switching Test Circuit

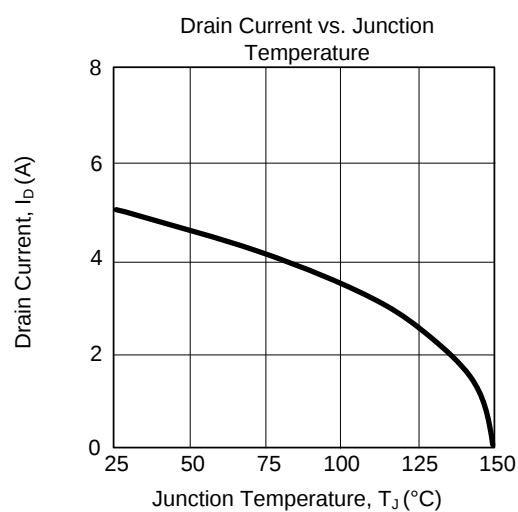
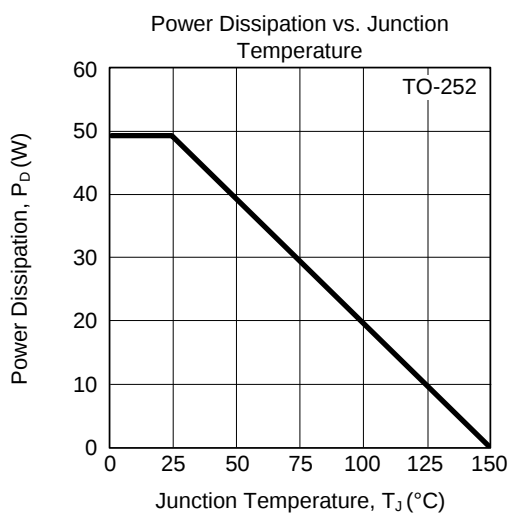
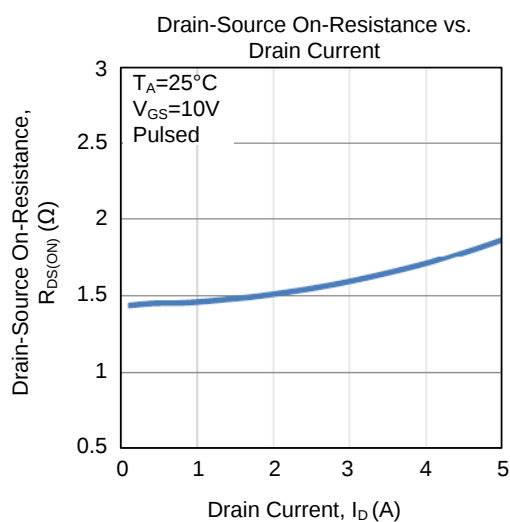
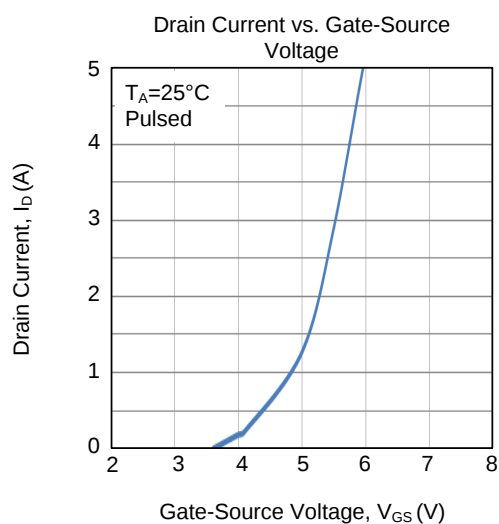
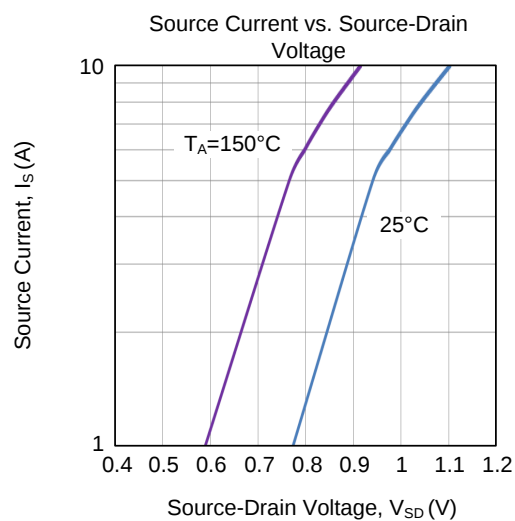
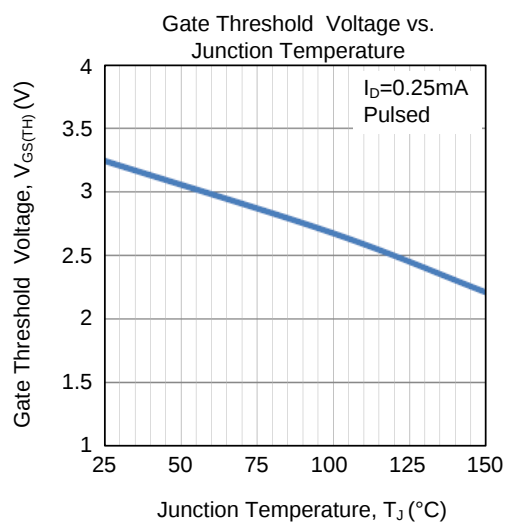


Unclamped Inductive Switching Waveforms

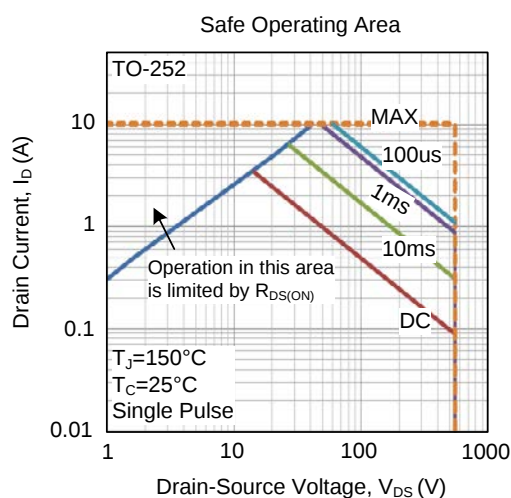
TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Cont.)



■ TYPICAL CHARACTERISTICS (Cont.)



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.