



UT3437

Power MOSFET

-1.4A, -150V P-CHANNEL (D-S) POWER MOSFET

DESCRIPTION

The UTC **UT3437** is a P-channel MOSFET, it uses UTC's advanced technology to provide the customers with low gate charge, etc.

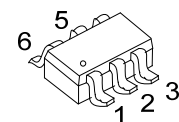
The UTC **UT3437** is suitable for active clamp circuits in DC/DC power supplies.

FEATURES

* $R_{DS(ON)} \leq 0.75 \Omega$ @ $V_{GS} = -10V$, $I_D = -1.4A$

$R_{DS(ON)} \leq 0.79 \Omega$ @ $V_{GS} = -6.0V$, $I_D = -1.0A$

* Low gate charge

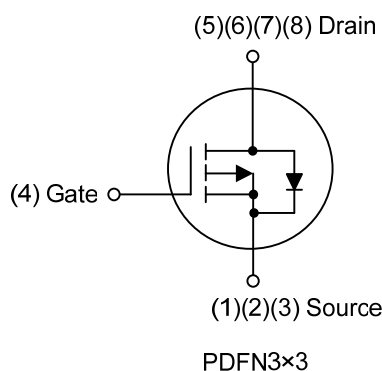
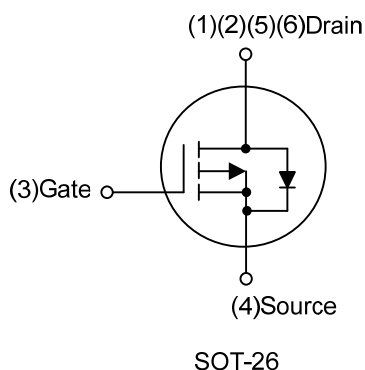


SOT-26



PDFN3x3

SYMBOL



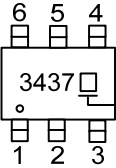
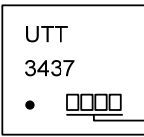
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT3437L-AG6-R	UT3437G-AG6-R	SOT-26	D	D	G	S	D	D	-	-	Tape Reel
UT3437L-P3030-R	UT3437G-P3030-R	PDFN3x3	S	S	S	G	D	D	D	D	Tape Reel

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

UT3437G-AG6-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) AG6: SOT-26, P3030: PDFN3x3
		(3) Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

SOT-26	PDFN3×3
 6 5 4 3437 1 2 3 L: Lead Free G: Halogen Free	 UTT 3437 • □□□□ Date Code

■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	-150	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ($T_C=25^{\circ}\text{C}$)		I_D	-1.4	A
Pulsed Drain Current		I_{DM}	-5	A
Peak Diode Recovery dv/dt (Note 3)		dv/dt	1.2	V/ns
Power Dissipation	SOT-26	P_D	1.1	W
	PDFN3×3		24	W
Junction Temperature		T_J	$-55 \sim +150$	$^{\circ}\text{C}$
Storage Temperature Range		T_{STG}	$-55 \sim +150$	$^{\circ}\text{C}$

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. $I_{SD} \leq -1.2\text{A}$, $di/dt \leq 200\text{A}/\mu\text{s}$, $V_{DD} \leq BV_{DS}$, Starting $T_J = 25^{\circ}\text{C}$.

■ THERMAL DATA (NOTE)

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-26	θ_{JA}	113	$^{\circ}\text{C}/\text{W}$
	PDFN3×3		60	$^{\circ}\text{C}/\text{W}$
Junction to Case	SOT-26	θ_{JC}	83	$^{\circ}\text{C}/\text{W}$
	PDFN3×3		5.2	$^{\circ}\text{C}/\text{W}$

Note: Surface Mounted on 1" x 1" FR4 board.

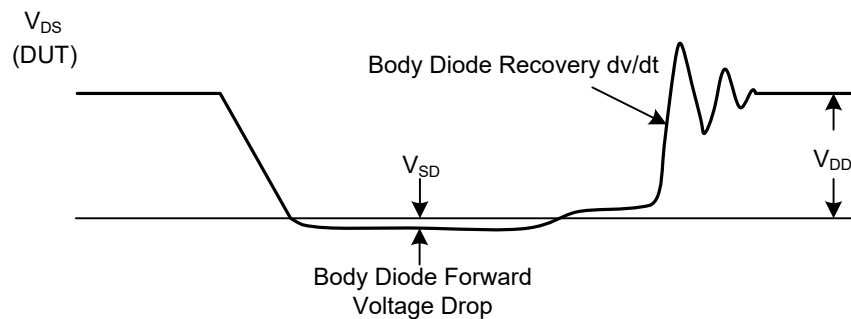
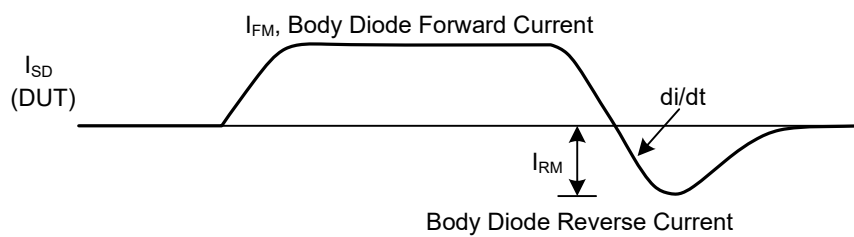
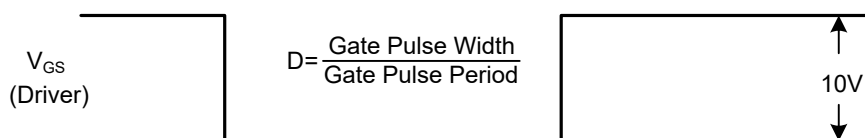
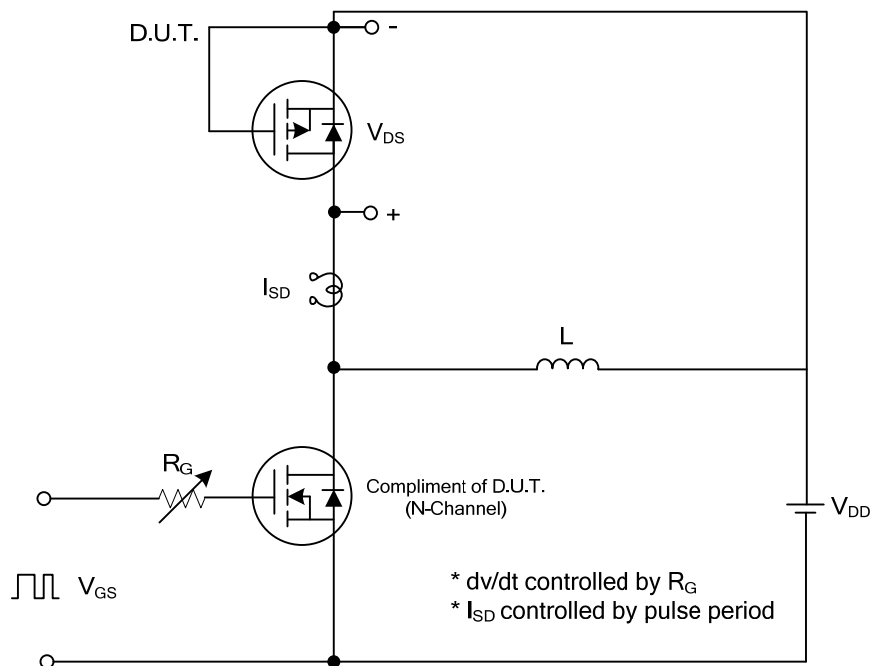
■ ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =-250μA, V _{GS} =0V	-150			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-150V, V _{GS} =0V			-1	μA
		V _{DS} =-150V, V _{GS} =0V, T _J =55°C			-10	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, 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
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-1.4A			0.75	Ω
		V _{GS} =-6.0V, I _D =-1.0A			0.79	Ω
DYNAMIC PARAMETERS (Note 2)						
Input Capacitance	C _{ISS}	V _{DS} =-25V, V _{GS} =0V, f=1MHz		440		pF
Output Capacitance	C _{OSS}			42		pF
Reverse Transfer Capacitance	C _{RSS}			20		pF
SWITCHING PARAMETERS(Note 1)						
Total Gate Charge	Q _G	V _{GS} =-10V, V _{DS} =-100V, I _D =-1.4A		14		nC
Gate to Source Charge	Q _{GS}			3		nC
Gate to Drain Charge	Q _{GD}			4		nC
Turn-ON Delay Time	t _{D(ON)}	V _{DS} =-75V, V _{GS} =-10V, I _D =-1.4A, R _G =3.3Ω		5		ns
Rise Time	t _R			17		ns
Turn-OFF Delay Time	t _{D(OFF)}			16		ns
Fall-Time	t _F			20		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Continuous Source-Drain Diode Current	I _S	T _C =25°C			-1.4	A
Pulse Diode Forward Current	I _{SM}				-5	A
Body Diode Voltage	V _{SD}	I _S =-1.0A, V _{GS} =0V			-1.2	V
Body Diode Reverse Recovery Time	t _{rr}	I _F =-1.4A, dI/dt=100A/μs		33		ns
Body Diode Reverse Recovery Charge	Q _{rr}			49		nC

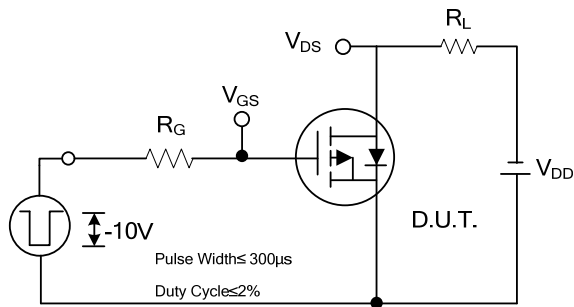
Notes: 1. Pulse test; pulse width ≤ 300μs, duty cycle ≤ 2%.

2. Guaranteed by design, not subject to production testing.

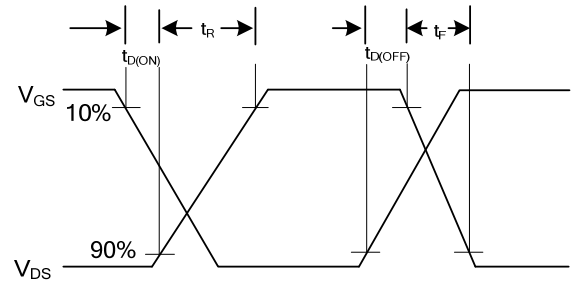
■ TEST CIRCUITS AND WAVEFORMS



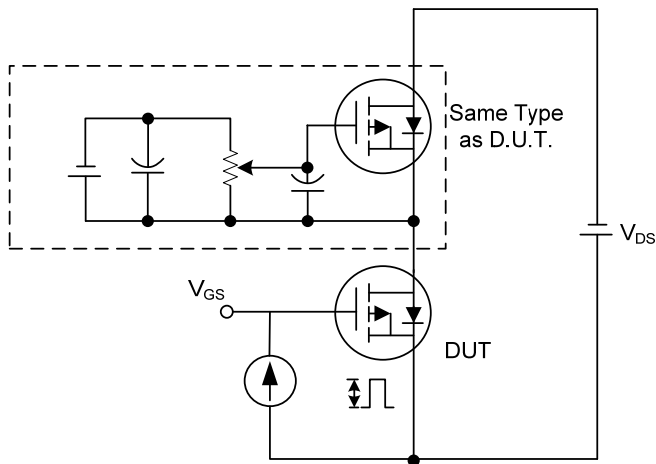
■ TEST CIRCUITS AND WAVEFORMS



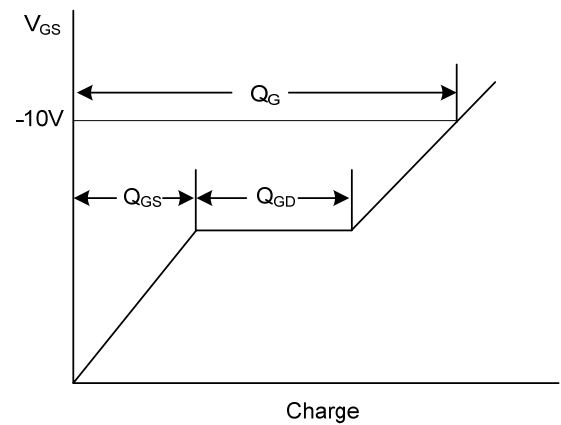
Switching Test Circuit



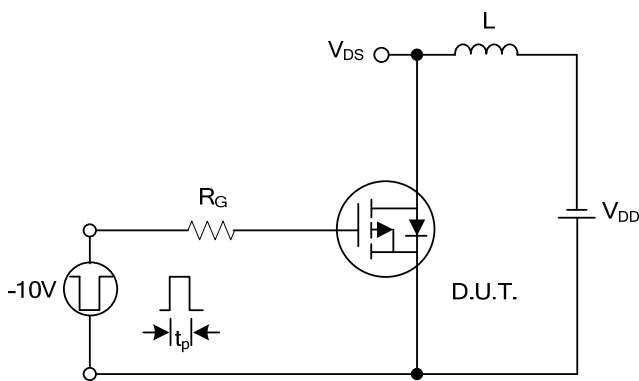
Switching Waveforms



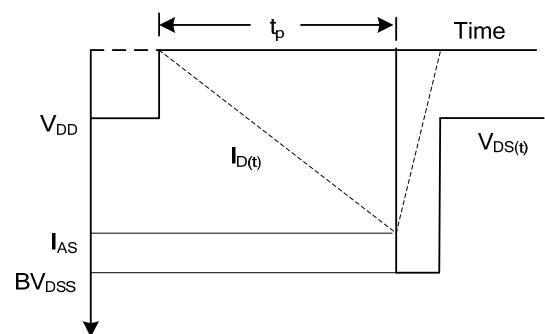
Gate Charge Test Circuit



Gate Charge Waveform

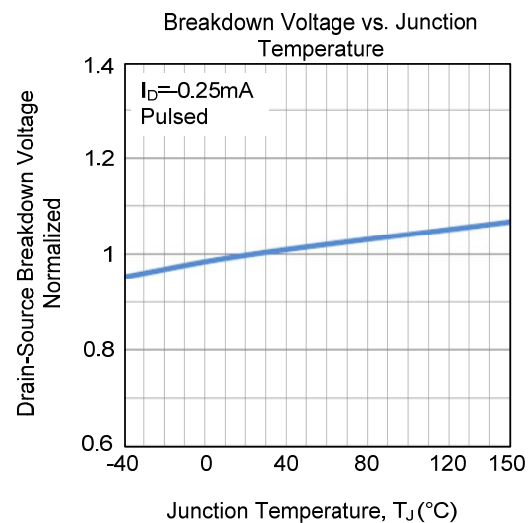
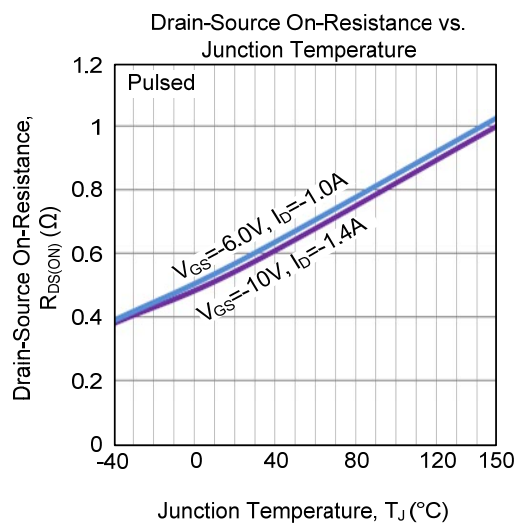
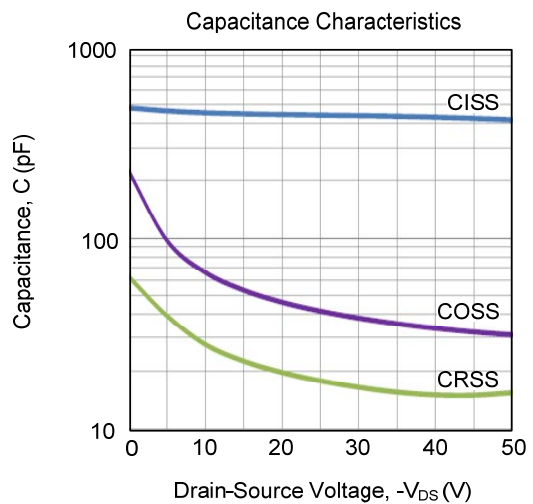
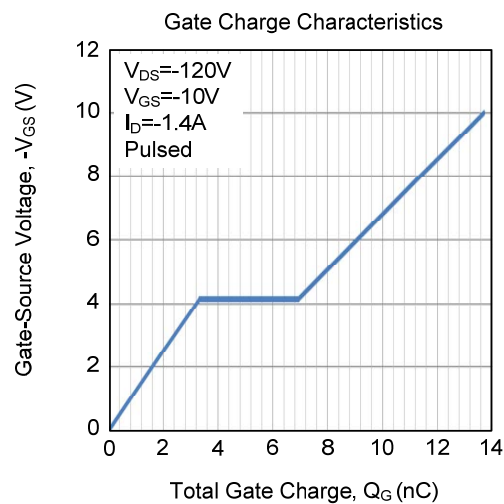
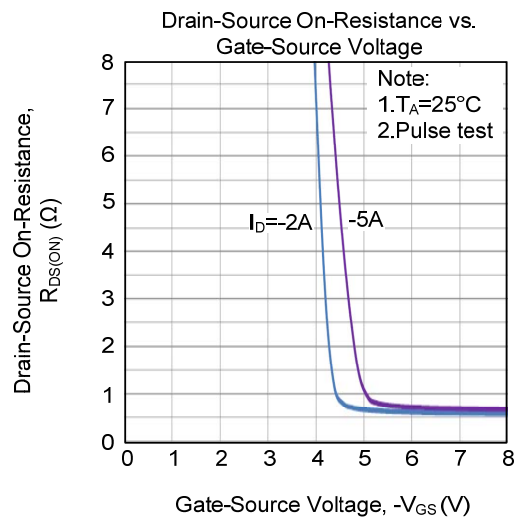
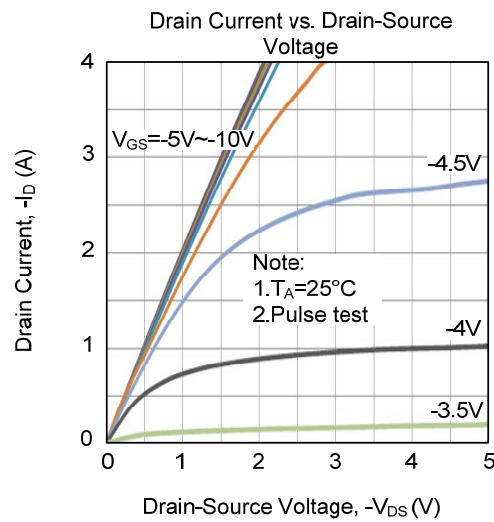


Unclamped Inductive Switching Test Circuit

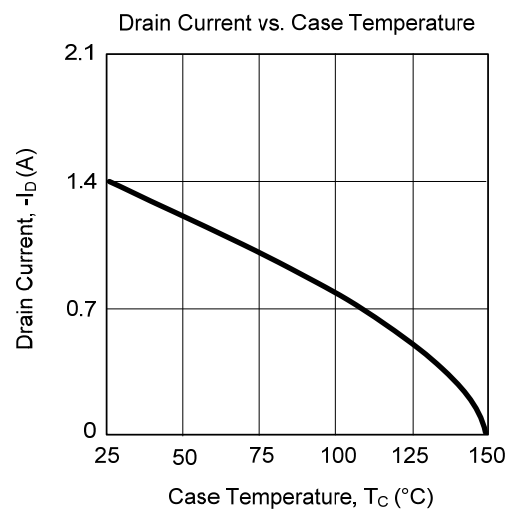
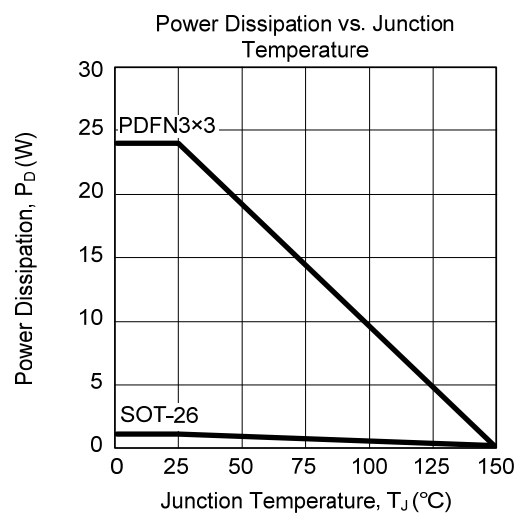
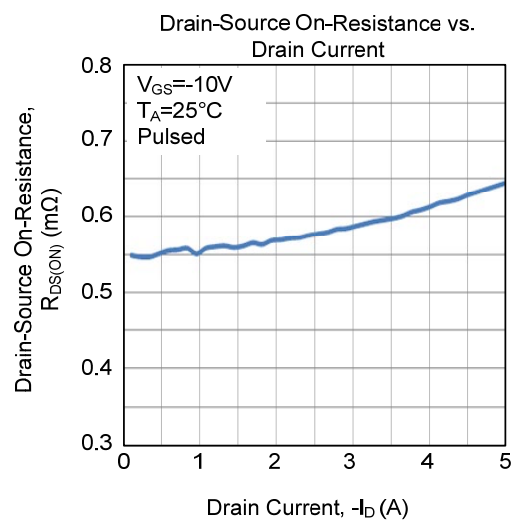
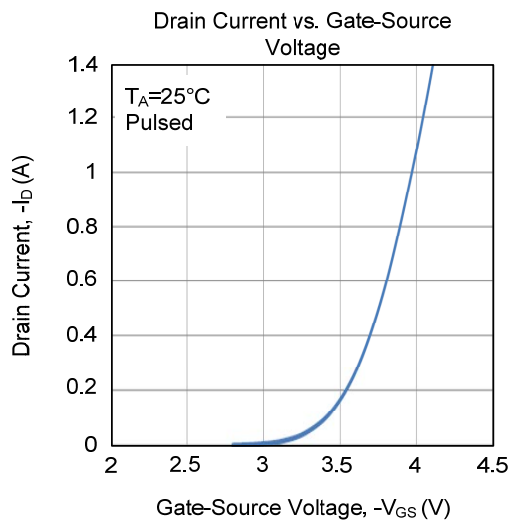
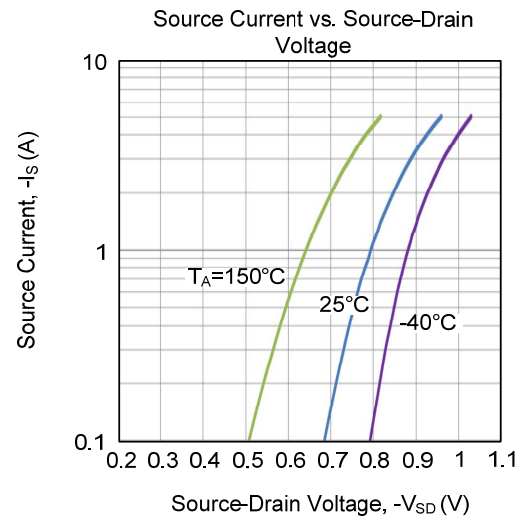
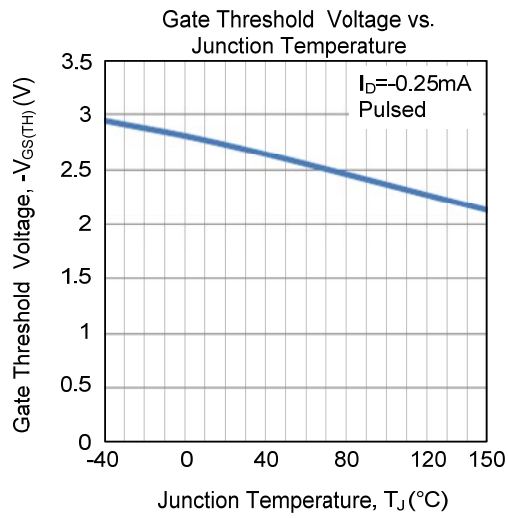


Unclamped Inductive Switching Waveforms

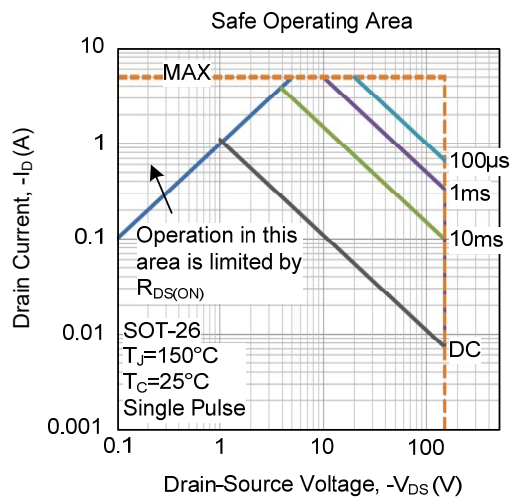
TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Cont.)



TYPICAL CHARACTERISTICS (Cont.)



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