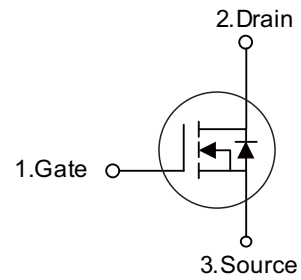


■ PRODUCT CHARACTERISTICS

VDSS	650V
$R_{DS(on)typ}(@V_{GS}=10V)$	4.3Ω
Qg@type	12nC
ID	2A

Symbol



■ APPLICATIONS

- \* High efficiency switch mode power supplies
- \* Electronic lamp ballasts based on half bridge
- \* LED power supplies

■ FEATURES

- \* Fast switching capability
- \* Avalanche energy specified
- \* Improved dv/dt capability, high ruggedness



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT2N65D	TO-252	2500 pieces /Reel
N/A	MOT2N65C	TO-251	70 pieces/Tube

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

PARAMETER	SYMBOL	RATINGS	UNIT	
Drain-Source Voltage	$V_{DSS}$	650	V	
Gate-Source Voltage	$V_{GSS}$	$\pm 30$	V	
Avalanche Current (Note 2)	$I_{AR}$	2.0	A	
Drain Current	Continuous	$I_D$	2.0	A
	Pulsed (Note 2)	$I_{DM}$	8.0	A
Avalanche Energy	Single Pulsed (Note 3)	$E_{AS}$	110	mJ
Peak Diode Recovery dv/dt (Note 4)	dv/dt	4.5	V/ns	
Power Dissipation	TO-251/TO-252	$P_D$	44	W
Junction Temperature	$T_J$	+150	$^\circ\text{C}$	
Operating Temperature	$T_{OPR}$	-55 ~ +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.

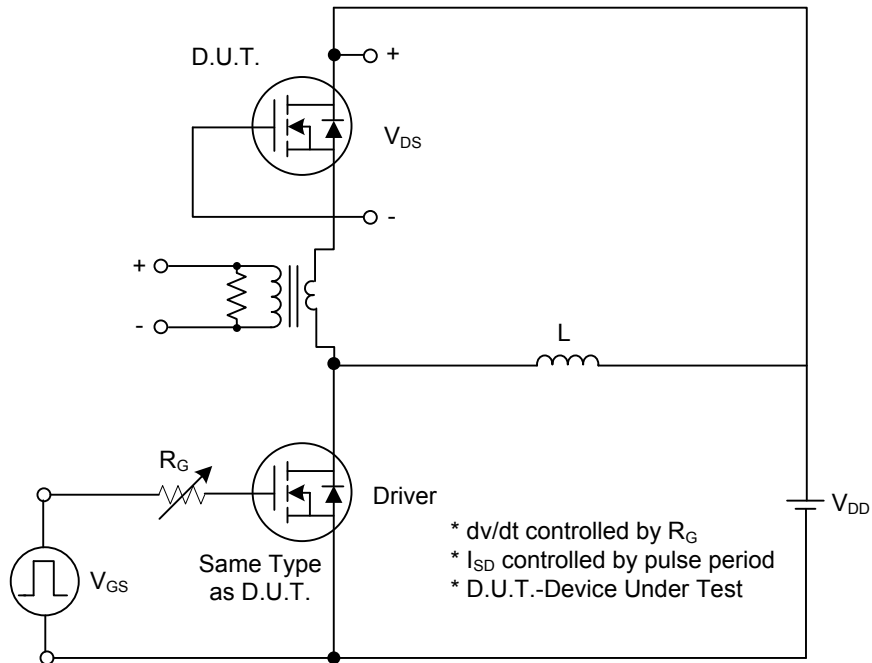
2. Repetitive Rating : Pulse width limited by  $T_J$ .
3.  $L=55\text{mH}$ ,  $I_{AS}=2.0\text{A}$ ,  $V_{DD}=50\text{V}$ ,  $R_G=25\ \Omega$ , Starting  $T_J = 25^\circ\text{C}$
4.  $I_{SD}\leq 2.4\text{A}$ ,  $di/dt\leq 200\text{A}/\mu\text{s}$ ,  $V_{DD} \leq BV_{DSS}$ , Starting  $T_J = 25^\circ\text{C}$

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

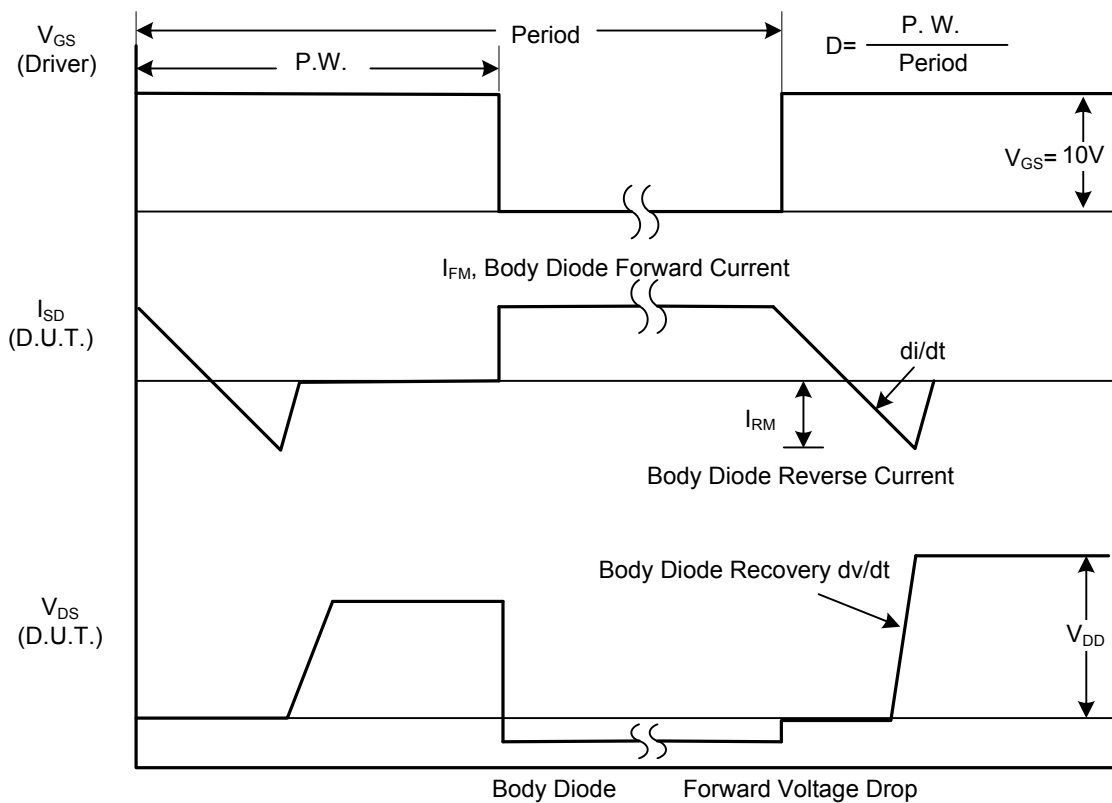
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	650	-	-	V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS} = 650V, V_{GS} = 0V$	-	-	10	$\mu A$
Gate-Source Leakage Current	Forward	$I_{GSS}$	-	-	100	nA
	Reverse				-100	nA
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	$I_D = 250\mu A$ , Referenced to $25^\circ\text{C}$	-	0.4	-	$V/^\circ\text{C}$
On characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.0	-	4.0	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 1A$	-	4.3	6.0	$\Omega$
Dynamic characteristics						
Input Capacitance	$C_{ISS}$	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1\text{MHz}$	-	240	-	pF
Output Capacitance	$C_{OSS}$		-	35	-	pF
Reverse Transfer Capacitance	$C_{RSS}$		-	4.6	-	pF
Switching characteristics						
Turn-On Delay Time	$t_{D(ON)}$	$V_{DD} = 30V, I_D = 0.5A,$ $R_G = 25\Omega$ (Note 1, 2)	-	40	-	ns
Turn-On Rise Time	$t_R$		-	40	-	ns
Turn-Off Delay Time	$t_{D(OFF)}$		-	50	-	ns
Turn-Off Fall Time	$t_F$		-	22	-	ns
Total Gate Charge	$Q_G$	$V_{DS} = 50V, V_{GS} = 10V,$ $I_D = 1.3A$ (Note 1, 2)	-	12	-	nC
Gate-Source Charge	$Q_{GS}$		-	5.2	-	nC
Gate-Drain Charge	$Q_{GD}$		-	2	-	nC
Drain-source diode characteristics						
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0V, I_{SD} = 2.0A$	-	-	1.4	V
Continuous Drain-Source Current	$I_{SD}$		-	-	2.0	A
Pulsed Drain-Source Current	$I_{SM}$		-	-	8.0	A

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

■ TEST CIRCUITS AND WAVEFORMS

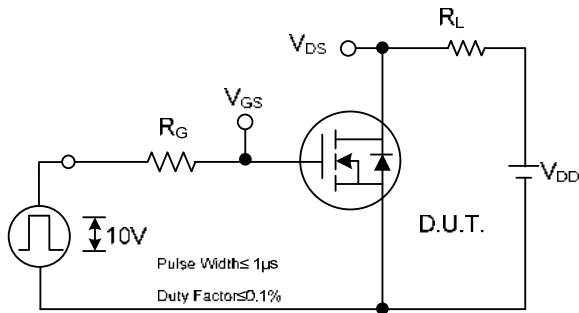


Peak Diode Recovery  $dv/dt$  Test Circuit

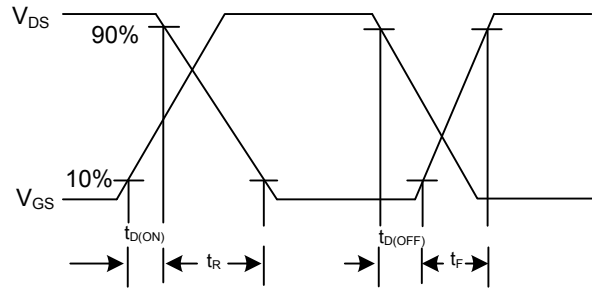


Peak Diode Recovery  $dv/dt$  Waveforms

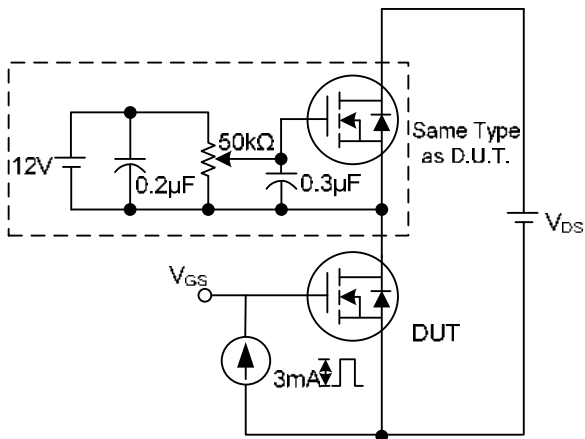
■ TEST CIRCUITS AND WAVEFORMS(Cont.)



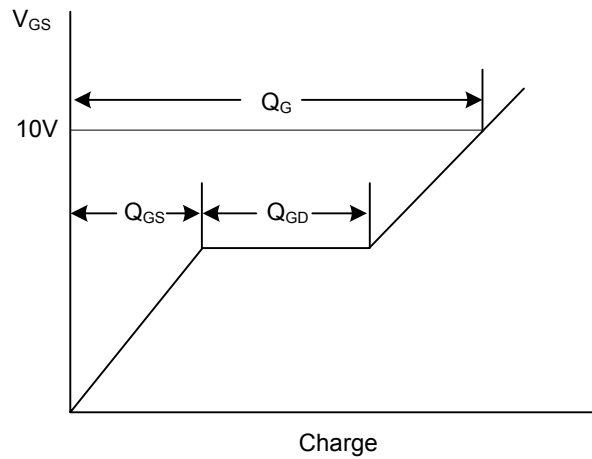
Switching Test Circuit



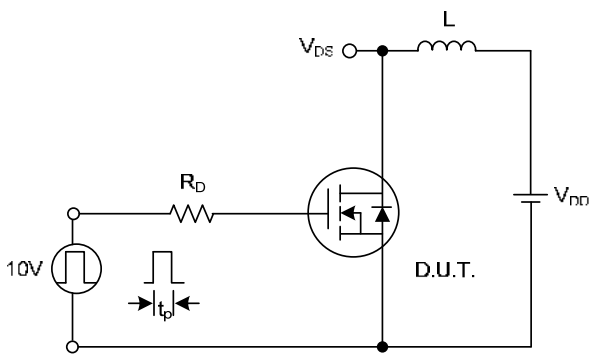
Switching Waveforms



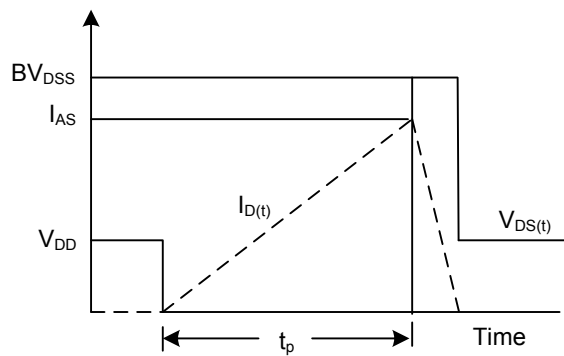
Gate Charge Test Circuit



Gate Charge Waveform

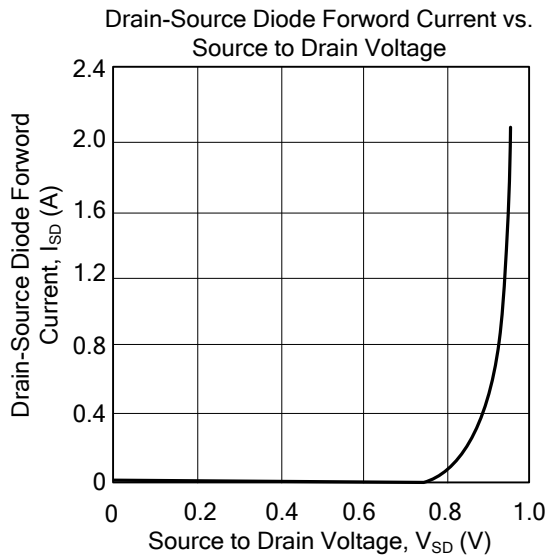
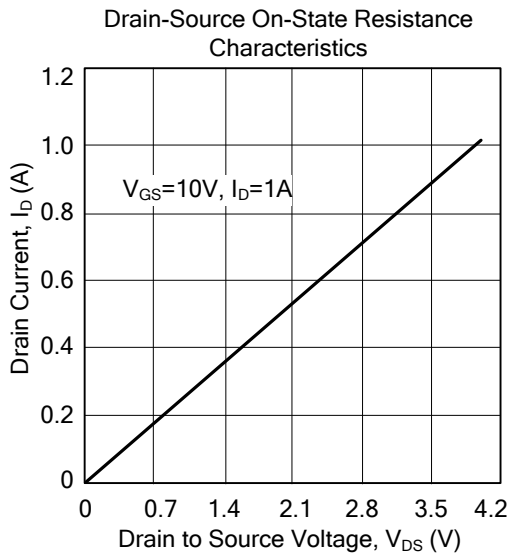
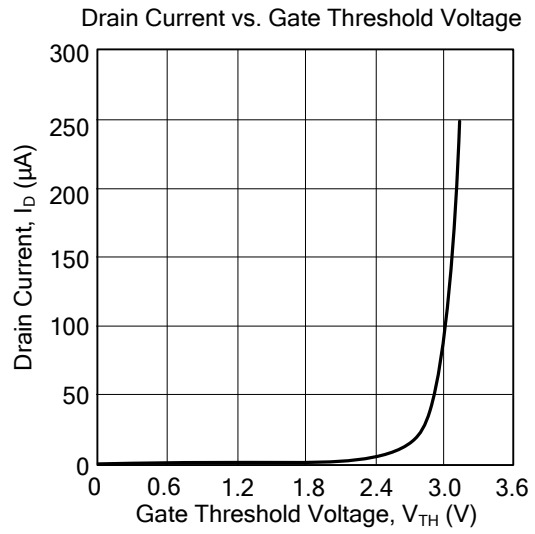
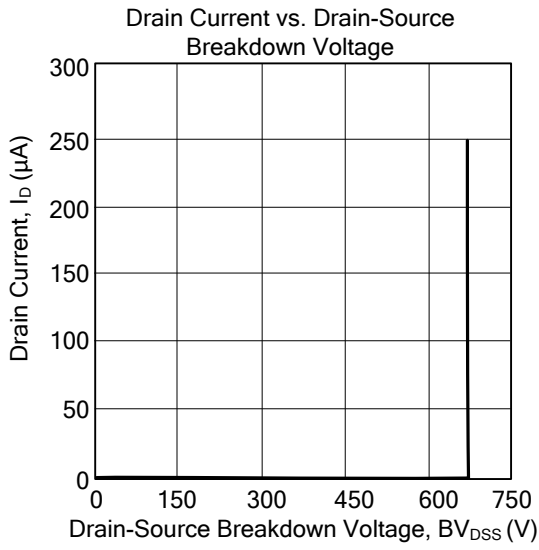


Unclamped Inductive Switching Test Circuit

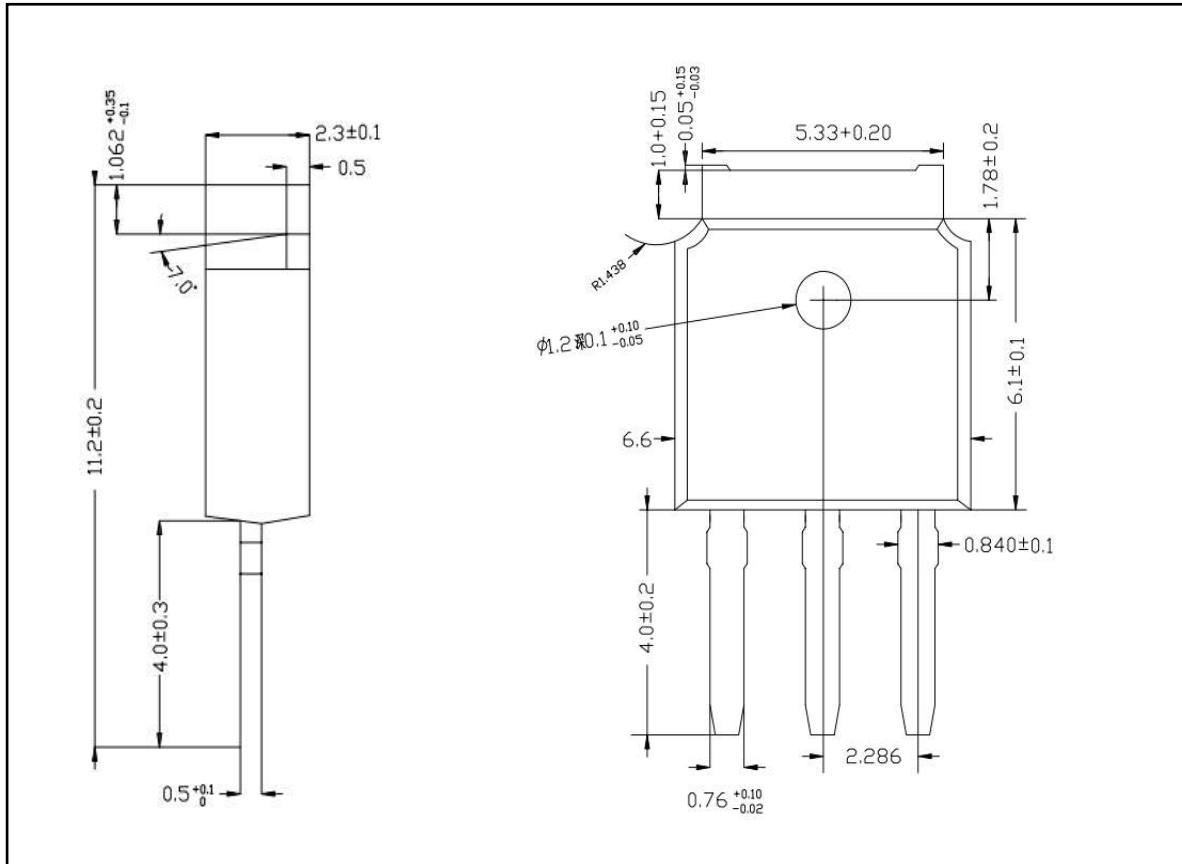


Unclamped Inductive Switching Waveforms

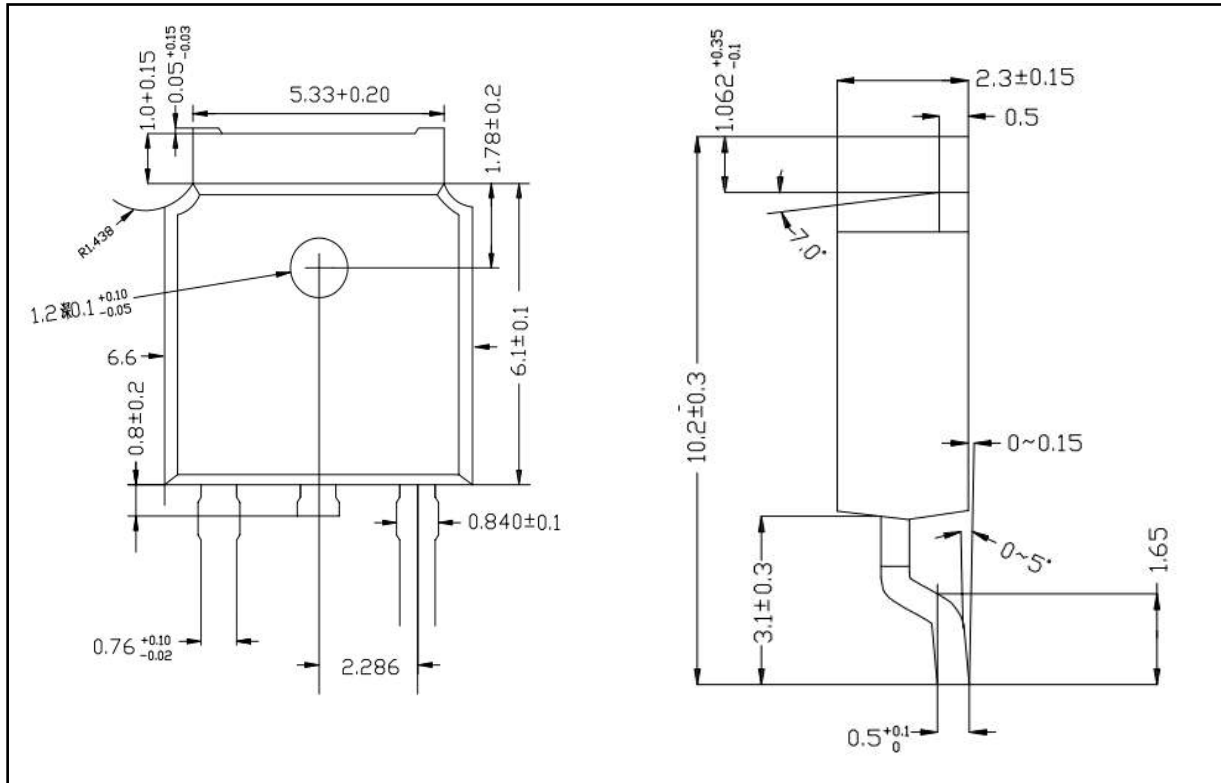
■ TYPICAL CHARACTERISTICS



■ TO-251 PACKAGE OUTLINE DIMENSIONS



■ TO-252 PACKAGE OUTLINE DIMENSIONS



## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [MOSFET](#) category:*

*Click to view products by [MOT](#) manufacturer:*

Other Similar products are found below :

[IRFD120](#) [JANTX2N5237](#) [BUK455-60A/B](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#) [IPS70R2K0CEAKMA1](#) [SQD23N06-31L-GE3](#)  
[TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#) [DMN1017UCP3-7](#) [DMN1053UCP4-7](#) [SQJ469EP-T1-GE3](#) [NTE2384](#) [DMC2700UDMQ-7](#)  
[DMN2080UCB4-7](#) [DMN61D9UWQ-13](#) [US6M2GTR](#) [DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)  
[STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#) [DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [DMN2990UFB-7B](#)  
[IPB80P04P405ATMA2](#) [2N7002W-G](#) [MCAC30N06Y-TP](#) [MCQ7328-TP](#) [NTMC083NP10M5L](#) [BXP7N65D](#) [BXP4N65F](#) [AOL1454G](#)  
[WMJ80N60C4](#) [BXP2N20L](#) [BXP2N65D](#) [BXT1150N10J](#) [BXT1700P06M](#) [TSM60NB380CP](#) [ROG](#) [RQ7L055BGTGR](#) [DMNH15H110SK3-13](#)  
[SLF10N65ABV2](#) [BSO203SP](#) [BSO211P](#) [IPA60R230P6](#)