

■ PRODUCT CHARACTERISTICS

VDSS	100V
R _{DS(on)} Typ(@V _{GS} =10 V)	80mΩ
Qg@type	24nC
ID	15A

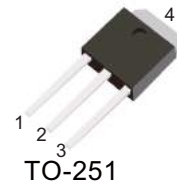
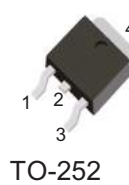
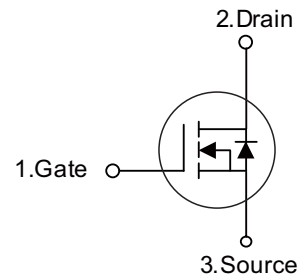
■ APPLICATIONS

- * Electronic Ballast
- * Electronic Transformer
- * Switch Mode Power Supply

■ FEATURES

- * Low On-Resistance
- * Fast Switching
- * High Input Resistance
- * Rohs Compliant
- * Package: TO-251 or TO-252 (IPAK & DPAK)

Symbol



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT15N10D	TO-252	2500 pieces /Reel
N/A	MOT15N10C	TO-251	70 pieces/Tube

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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V _{DSS}	100	V
Gate-Source Voltage	V _{GSS}	±20	V
Drain Current Continuous	I _D	T _C =25°C, T _J =150°C	15
		T _C =70°C, T _J =150°C	13.8
Power Dissipation	P _D	T _C =25°C	34.7
		T _C =70°C	22.2
Operating Junction Temperature	T _J	-55~+150	°C

Note: 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.

■ THERMAL CHARACTERISTICS (T_A=25°C, unless otherwise noted)

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case (Note)	θ _{JC}	3.6	°C/W

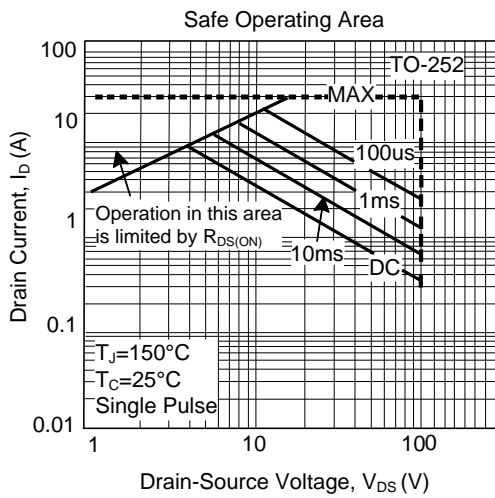
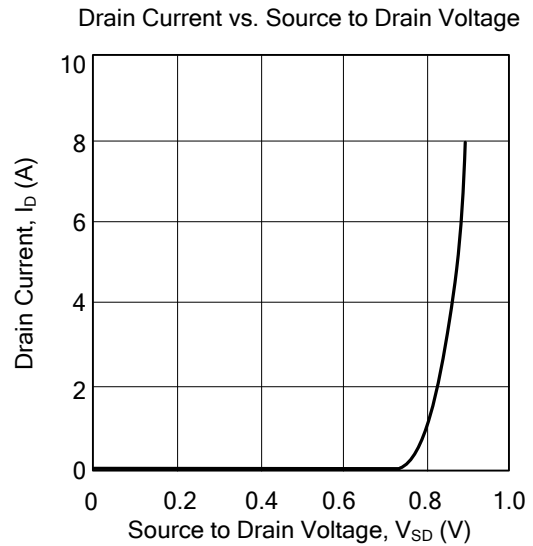
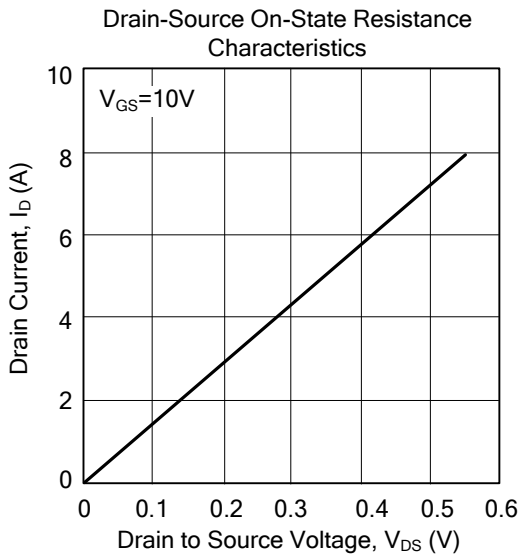
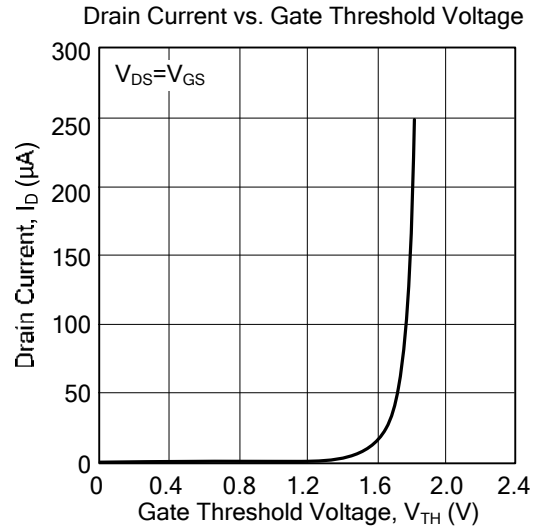
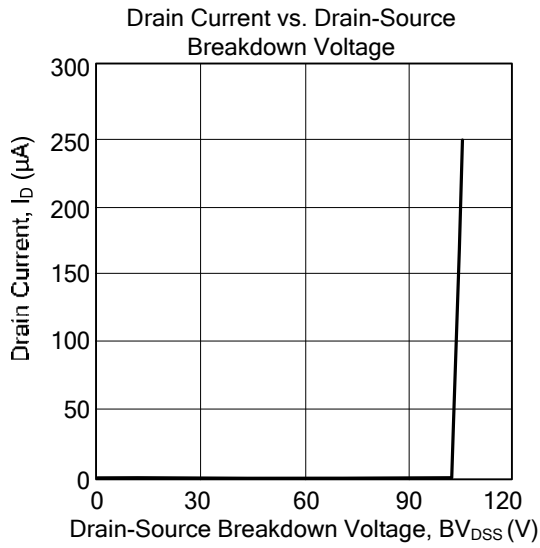
Note: The device mounted on 1in² FR4 board with 2 oz copper.

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

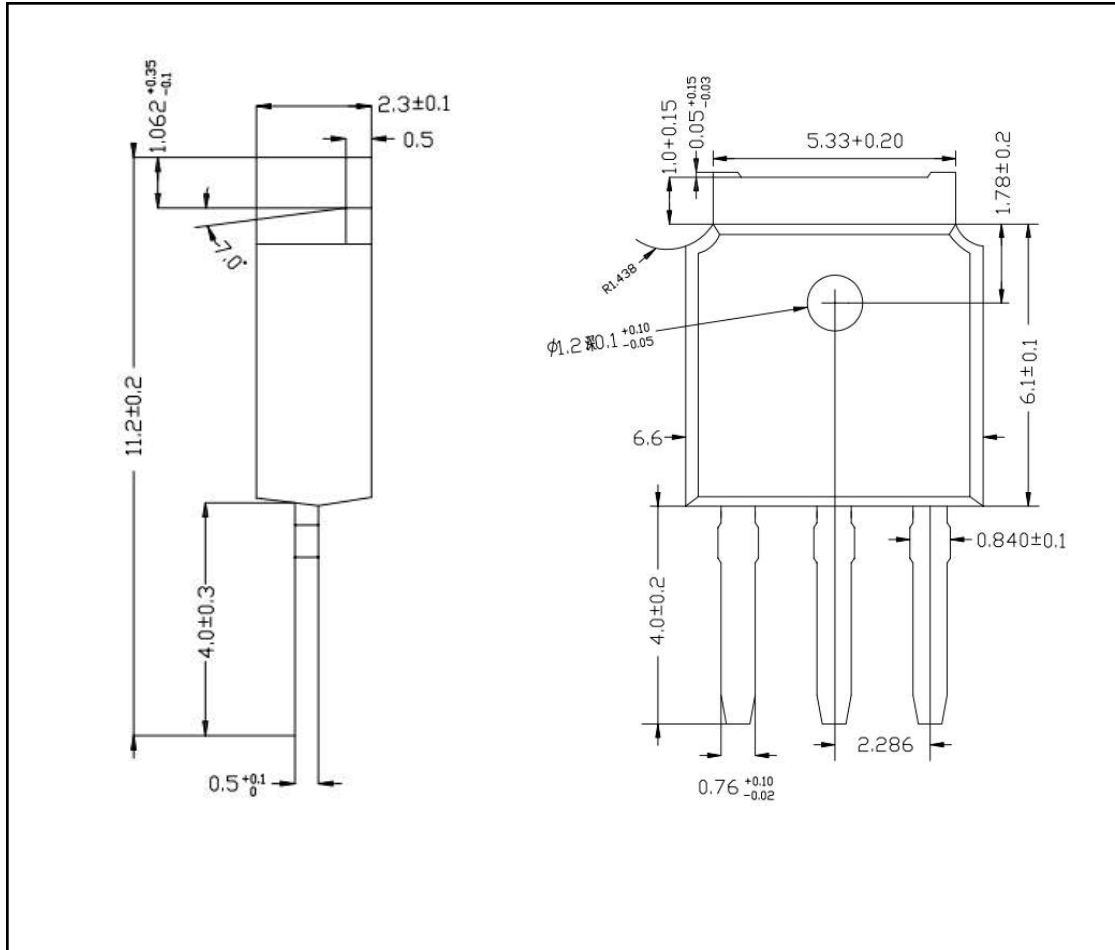
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}$, $V_{GS}=0\text{V}$	100	-	-	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=80\text{V}$, $V_{GS}=0\text{V}$	-	-	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=+20\text{V}$, $V_{DS}=0\text{V}$	-	-	+100	nA
		$V_{GS}=-20\text{V}$, $V_{DS}=0\text{V}$	-	-	-100	nA
On characteristics Dynamic characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	1	-	3	V
Drain-Source On-State Resistance (Note)	$R_{DS(ON)}$	$V_{GS}=10\text{V}$, $I_D=8\text{A}$	-	80	100	m Ω
Dynamic characteristics						
Input Capacitance	C_{ISS}	$V_{GS}=0\text{V}$, $V_{DS}=15\text{V}$, $f=1\text{MHz}$	-	890	-	pF
Output Capacitance	C_{OSS}		-	58	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	23	-	pF
Switching characteristics						
Total Gate Charge	Q_G	$V_{GS}=10\text{V}$, $V_{DS}=80\text{V}$, $I_D=10\text{A}$	-	24	-	nC
Total Gate Charge	Q_G	$V_{GS}=4.5\text{V}$, $V_{DS}=80\text{V}$, $I_D=10\text{A}$	-	13	-	nC
Gate to Source Charge	Q_{GS}		-	4.6	-	nC
Gate to Drain Charge	Q_{GD}		-	7.6	-	nC
Gate-Resistance	R_G		$V_{DS}=0\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$	-	0.9	-
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DS}=50\text{V}$, $R_L=5\Omega$, $V_{GEN}=10\text{V}$, $R_G=1\Omega$	-	14	-	ns
Rise Time	t_R		-	33	-	ns
Turn-OFF Delay Time	$t_{D(OFF)}$		-	39	-	ns
Fall-Time	t_F		-	5	-	ns
Source-drain diode ratings and characteristics						
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=8\text{A}$, $V_{GS}=0\text{V}$	-	0.9	1.2	V

 Note: Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$, Guaranteed by design, not subject to production testing.

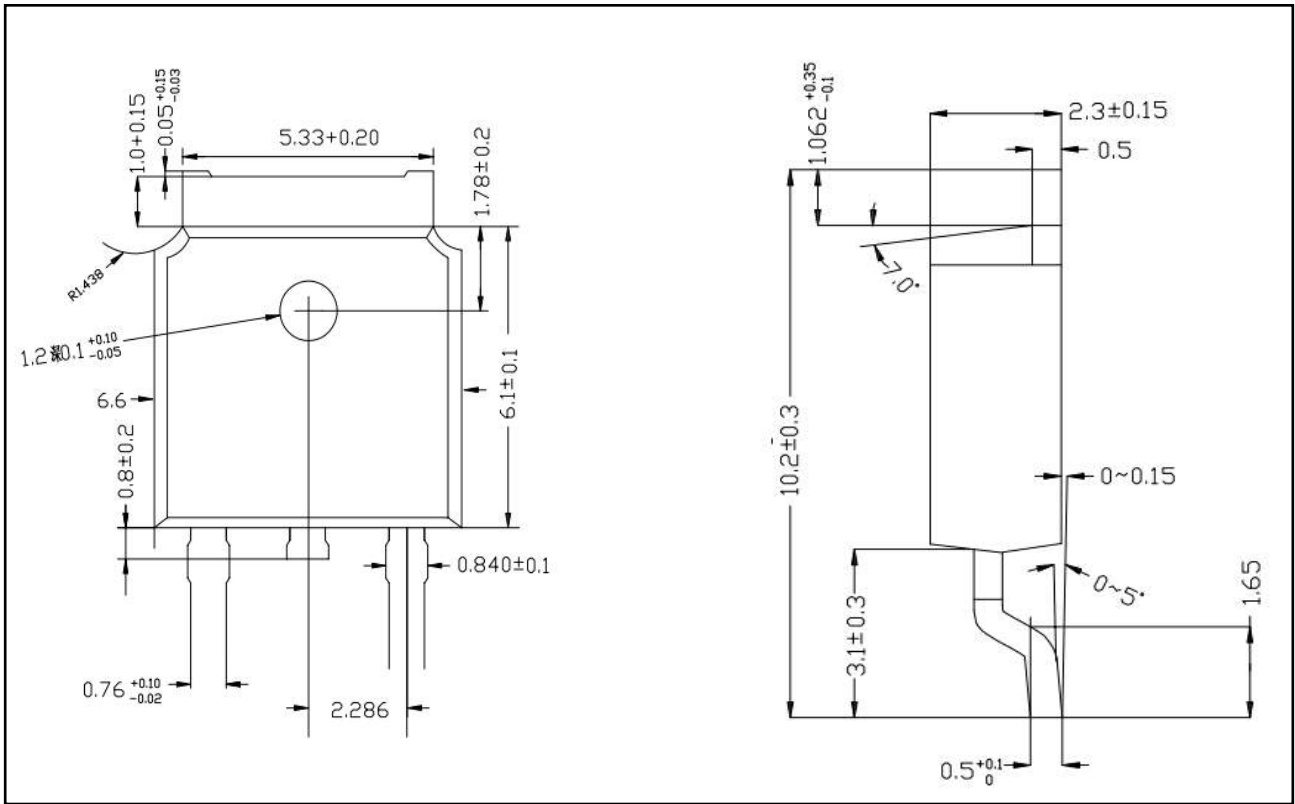
■ TYPICAL CHARACTERISTICS



■ TO-251-3L PACKAGE OUTLINE DIMENSIONS



■ TO-252-2L PACKAGE OUTLINE DIMENSIONS



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