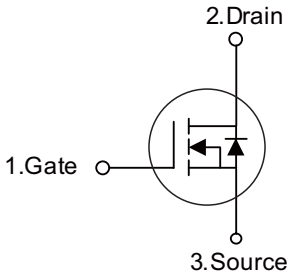
■ PRODUCT CHARACTERISTICS

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

Symbol



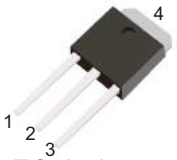
■ APPLICATIONS

* 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）

TO-252



TO-251

■ 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	T_C=25°C, T_J=150°C	I_D	15	A
	T_C=70°C, T_J=150°C		13.8	A
Power Dissipation	T_C=25°C	P_D	34.7	W
	T_C=70°C		22.2	W
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 1in^2 FR4 board with 2 oz copper.

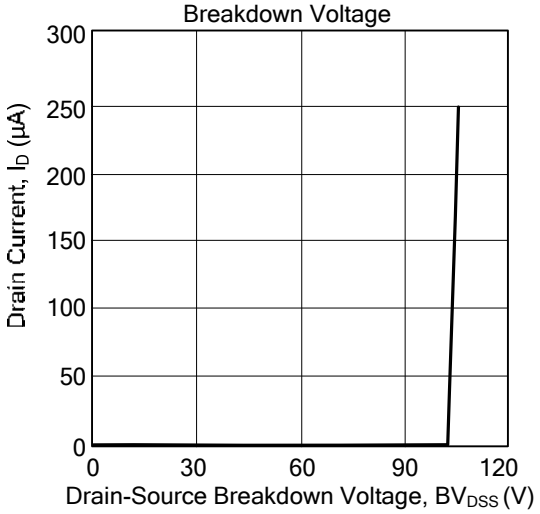
■ ELECTRICAL CHARACTERISTICS (T_C=25°C, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250μA, V_{GS}=0V	100	-	-	V
Drain-Source Leakage Current	I_{DSS}	V_{DS}=80V, V_{GS}=0V	-	-	1	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=+20V, V_{DS}=0V	-	-	+100	nA
		V_{GS}=-20V, V_{DS}=0V	-	-	-100	nA
On characteristics Dynamic characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=250μA	1	-	3	V
Drain-Source On-State Resistance (Note)	$R_{DS(ON)}$	V_{GS}=10V, I_D=8A	-	80	100	mΩ
Dynamic characteristics						
Input Capacitance	C_{ISS}	V_{GS}=0V, V_{DS}=15V, f=1MHz	-	890	-	pF
Output Capacitance	C_{OSS}		-	58	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	23	-	pF
Switching characteristics						
Total Gate Charge	Q_G	V_{GS}=10V, V_{DS}=80V, I_D=10A	-	24	-	nC
Total Gate Charge	Q_G	V_{GS}=4.5V, V_{DS}=80V, I_D=10A	-	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}=0V, V_{GS}=0V, f=1MHz	-	0.9	-	Ω
Turn-ON Delay Time	$t_{D(ON)}$	V_{DS}=50V, R_L=5Ω, V_{GEN}=10V, R_G=1Ω	-	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=8A, V_{GS}=0V	-	0.9	1.2	V

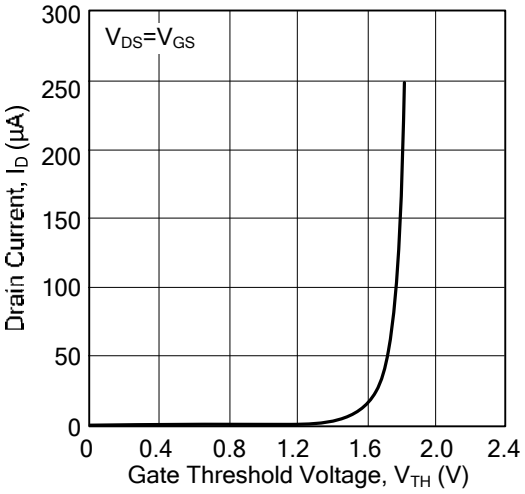
Note: Pulse test: pulse width≤300us, duty cycle≤2%, Guaranteed by design, not subject to production testing.

■ TYPICAL CHARACTERISTICS

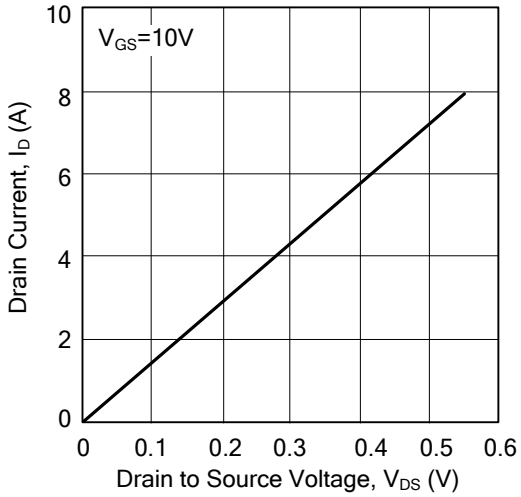
Drain Current vs. Drain-Source Breakdown Voltage



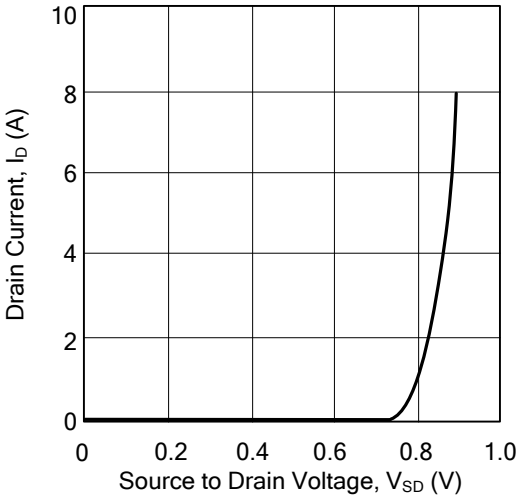
Drain Current vs. Gate Threshold Voltage



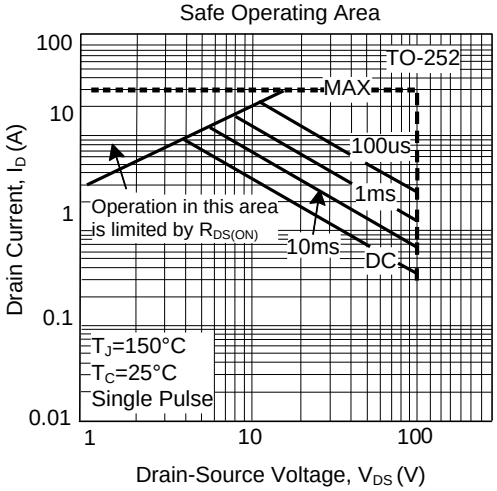
Drain-Source On-State Resistance Characteristics



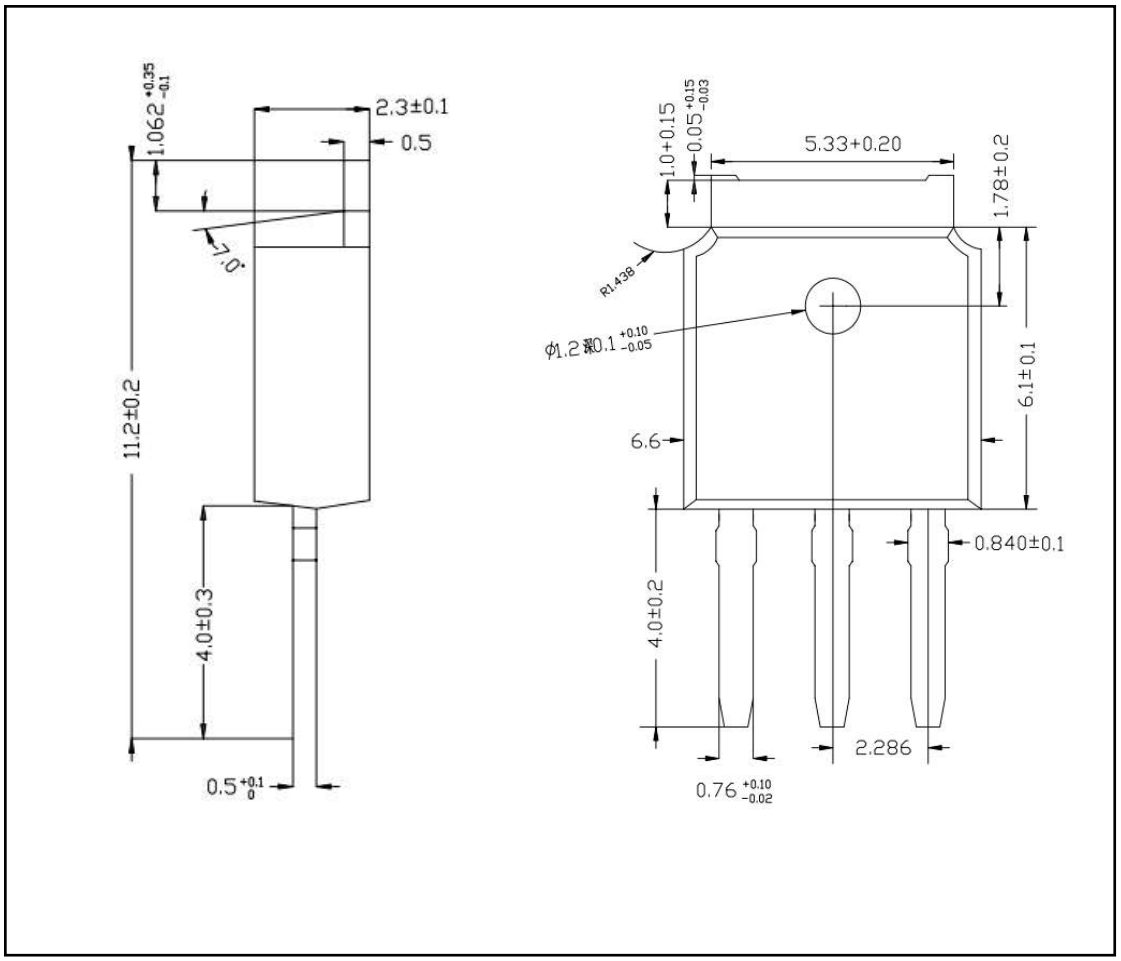
Drain Current vs. Source to Drain Voltage



Safe Operating Area



■ TO-251-3L PACKAGE OUTLINE DIMENSIONS



■ TO-252-2L PACKAGE OUTLINE DIMENSIONS