

PRODUCT CHARACTERISTICS

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

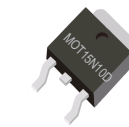
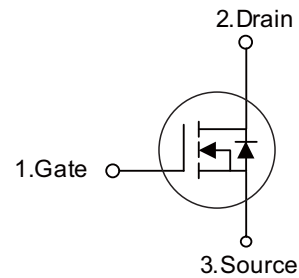
APPLICATIONS

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

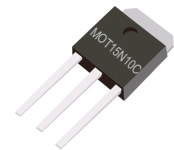
FEATURES

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

Symbol



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

PARAMETER			SYMBOL	RATINGS	UNIT
Drain-Source Voltage			V_{DSS}	100	V
Gate-Source Voltage			V_{GSS}	±20	V
Drain Current	Continuous	$T_C=25^\circ\text{C}, T_J=150^\circ\text{C}$	I_D	15	A
		$T_C=70^\circ\text{C}, T_J=150^\circ\text{C}$		13.8	A
	Pulsed		I_{DM}	60	A
Power Dissipation		$T_C=25^\circ\text{C}$	P_D	34.7	W
		$T_C=70^\circ\text{C}$		22.2	W
Operating Junction Temperature			T_J	-55~+150	$^\circ\text{C}$

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 ($T_A=25^\circ\text{C}$, unless otherwise noted)

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case (Note)	θ_{JC}	3.6	$^\circ\text{C/W}$

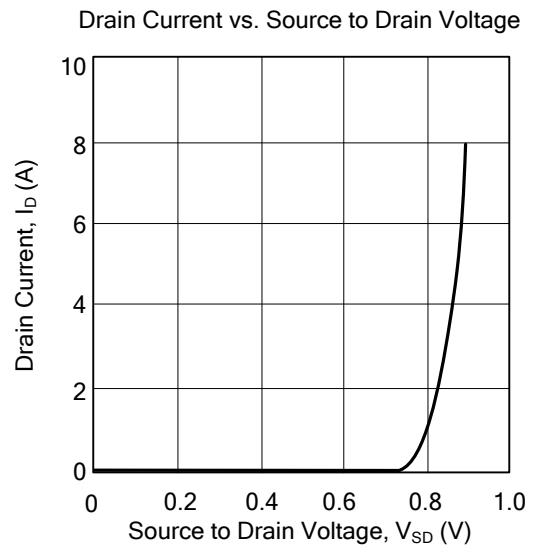
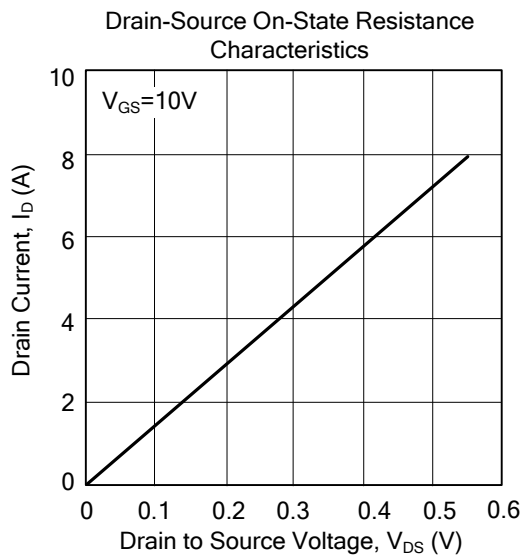
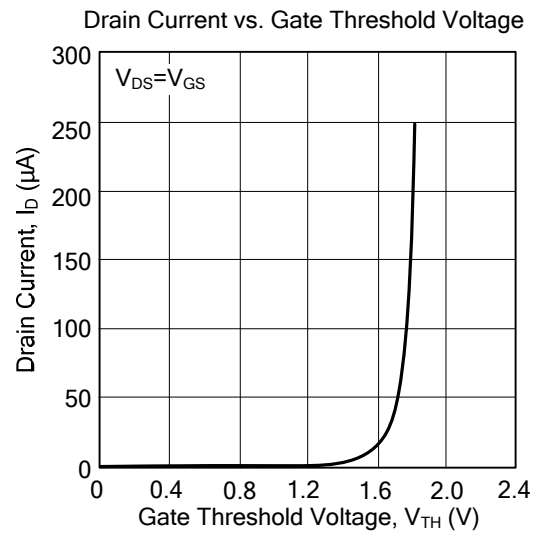
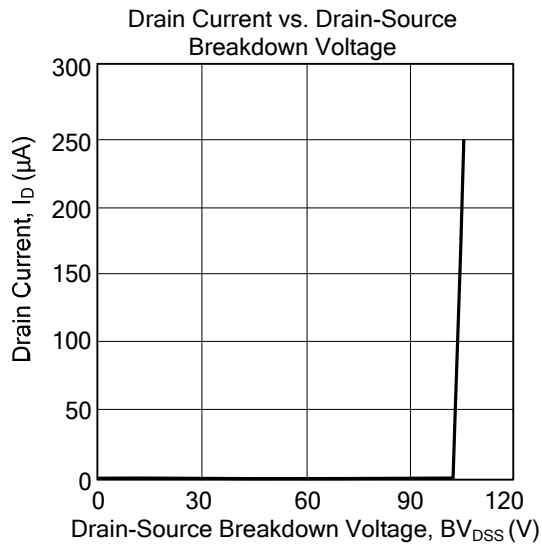
Note: The device mounted on 1in² FR4 board with 2 oz copper.

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

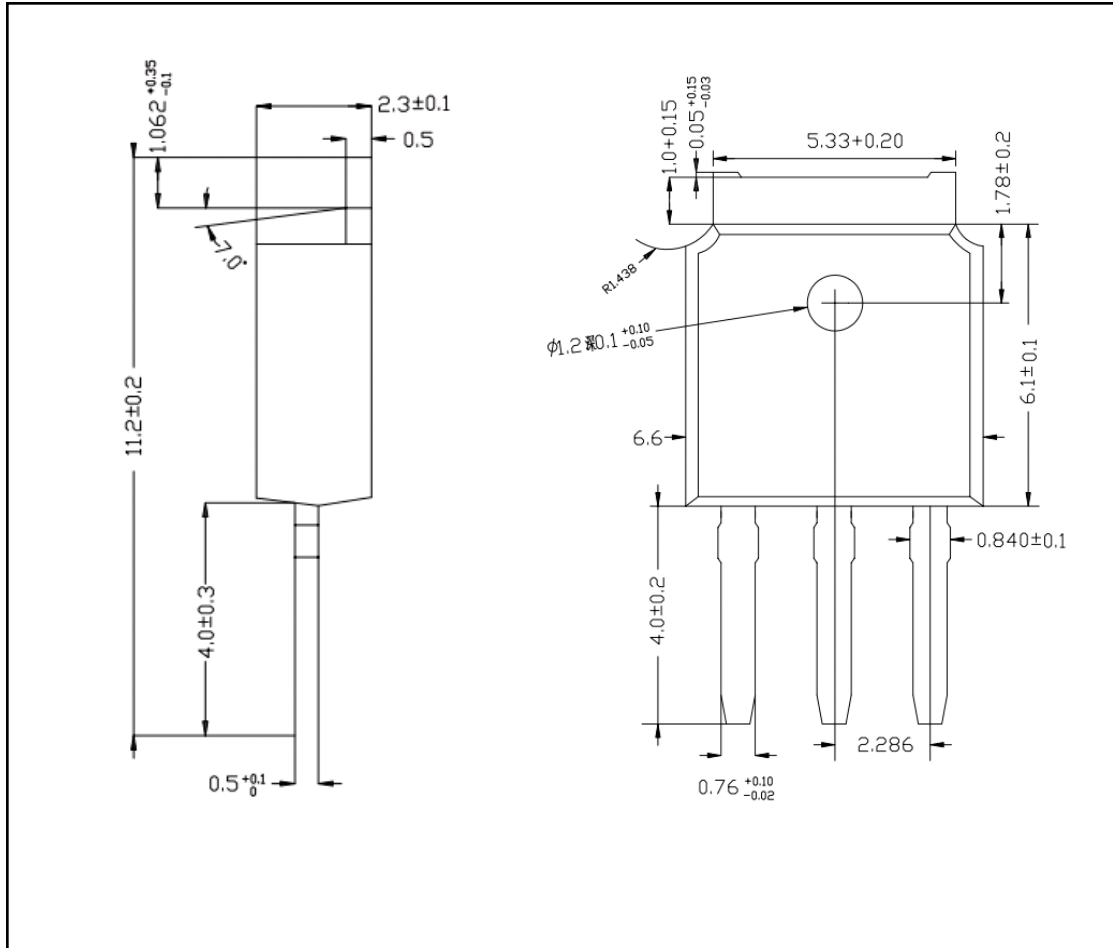
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A$, $V_{GS}=0V$	100			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=80V$, $V_{GS}=0V$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=+20V$, $V_{DS}=0V$			+100	nA
		$V_{GS}=-20V$, $V_{DS}=0V$			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu A$	1		3	V
Drain-Source On-State Resistance (Note)	$R_{DS(ON)}$	$V_{GS}=10V$, $I_D=8A$		80	100	m Ω
DYNAMIC PARAMETERS						
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 PARAMETERS						
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	$t_{D(ON)}$	$V_{DS}=50V$, $R_L=5\Omega$, $V_{GEN}=10V$, $R_G=1\Omega$		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}	$I_S=8A$, $V_{GS}=0V$		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

