

■ PRODUCT CHARACTERISTICS

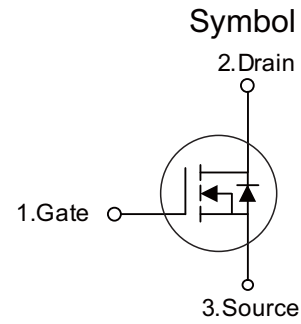
VDSS	700V
$R_{DS(on)Typ}(V_{GS}=10V)$	1.38Ω
Qg@type	35nC
ID	7A

■ APPLICATIONS

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

■ FEATURES

- * Ultra low gate charge
- * Low reverse transfer Capacitance
- * Fast switching capability
- * Avalanche energy tested
- * Improved dv/dt capability, high ruggedness



■ ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT7N70D	TO-252	2500 pieces/Reel
N/A	MOT7N70C	TO-251	70 pieces/Tube

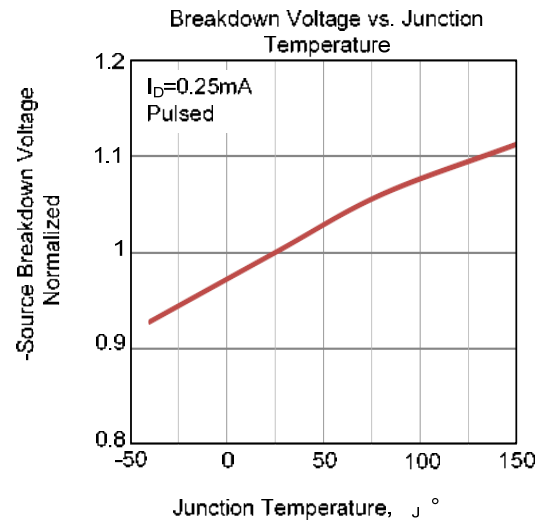
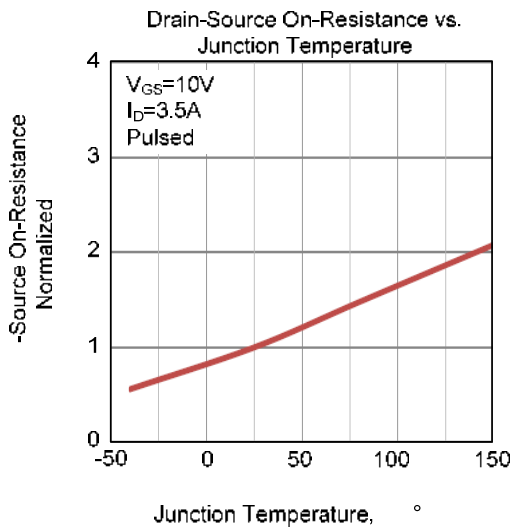
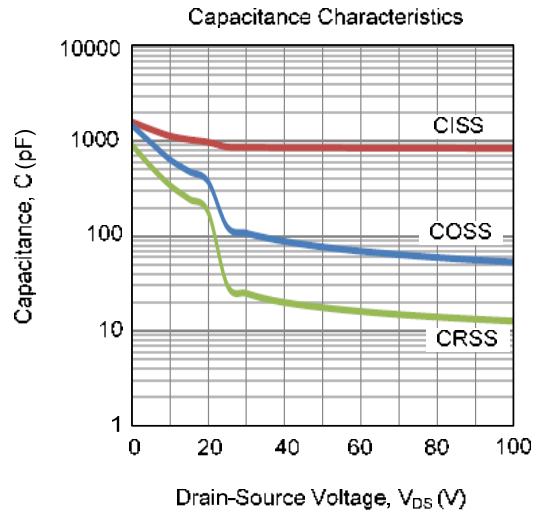
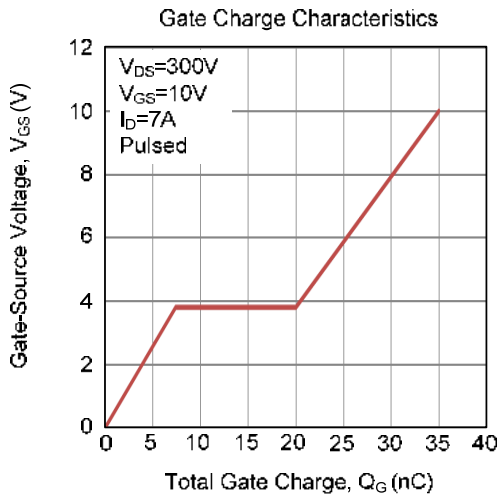
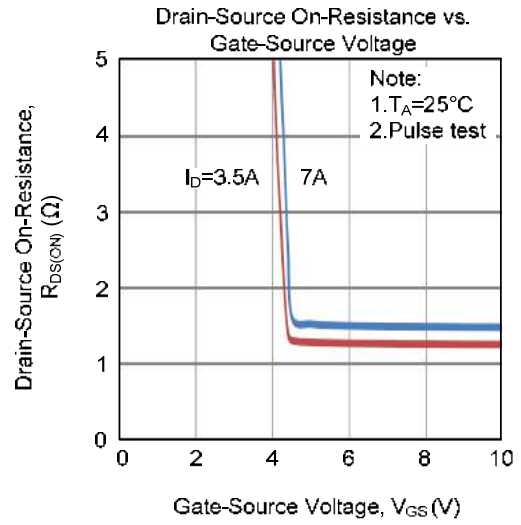
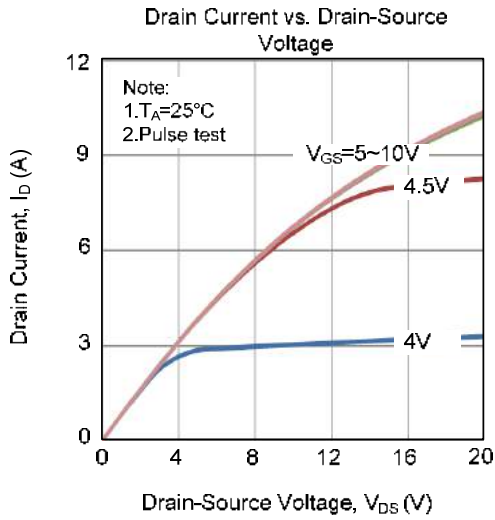
■ ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DSS}	700	V
Gate-Source Voltage	V_{GSS}	±30	V
Drain Current	Continuous	I_D	7
	Pulsed	I_{DM}	14
Avalanche Energy	Single Pulsed	E_{AS}	480
Peak Diode Recovery dv/dt (Note 4)	dv/dt	2.2	V/ns
Power Dissipation	P_D	40	W
Junction Temperature	T_J	+150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

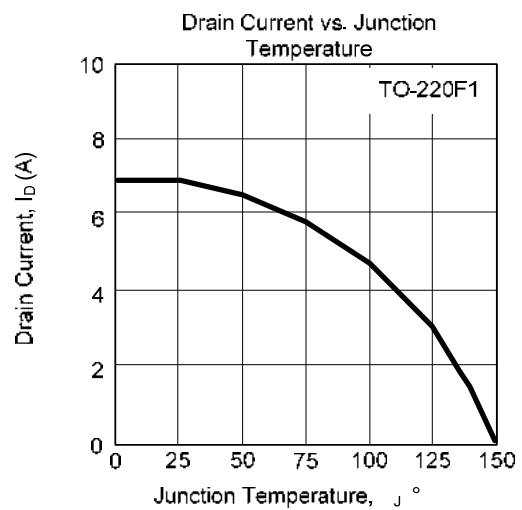
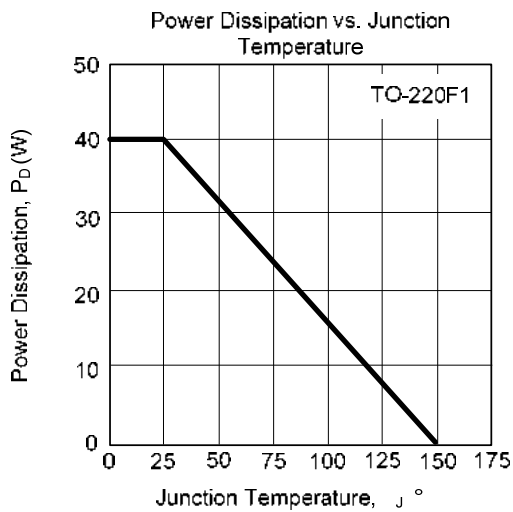
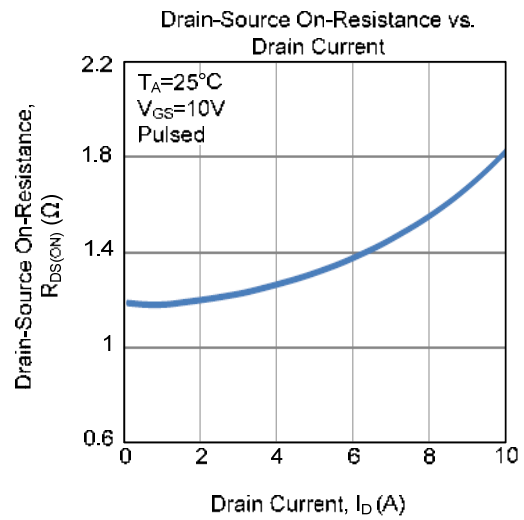
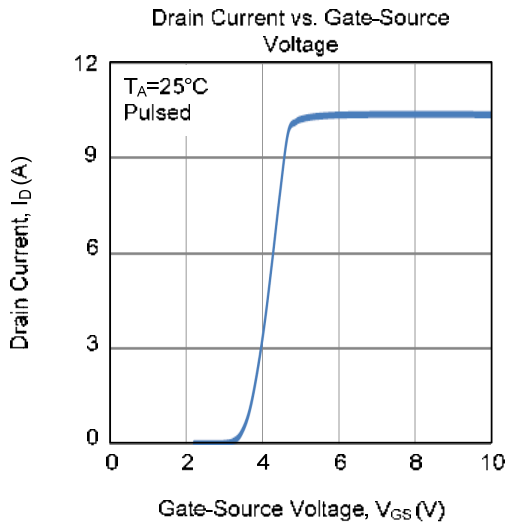
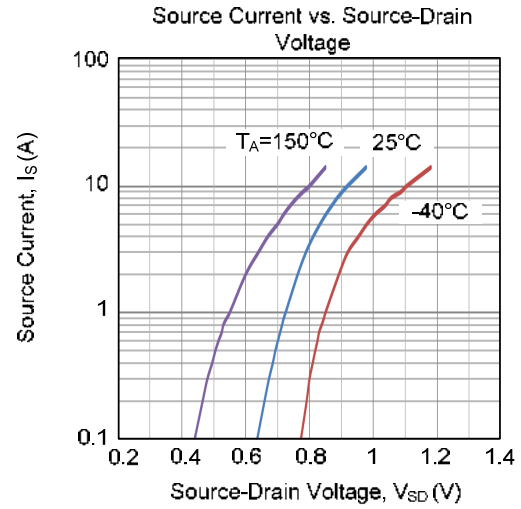
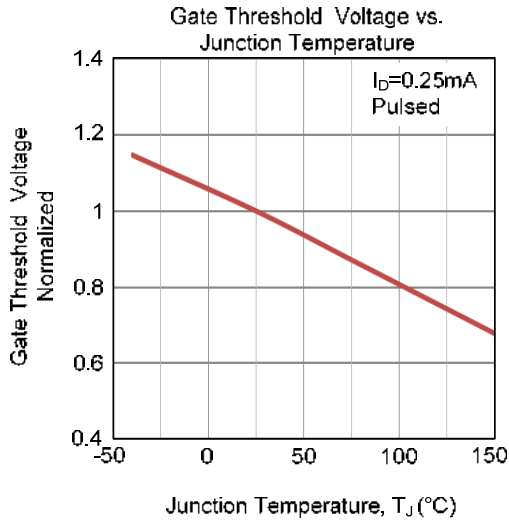
■ ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	700	-	-	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=700V, V_{GS}=0V$	-	-	1	μA
Gate-Source Leakage Current	Forward	I_{GSS} $V_{DS}=0V, V_{GS}=30V$	-	-	100	nA
	Reverse		$V_{DS}=0V, V_{GS}=-30V$	-	-	-100
On characteristics						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	-	4.0	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=3.5A$	-	1.38	1.5	Ω
Dynamic characteristics						
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1.0MHz$	-	868	-	pF
Output Capacitance	C_{OSS}		-	125	-	pF
Reverse Transfer Capacitance	C_{RSS}		-	30	-	pF
Switching characteristics						
Total Gate Charge (Note 1)	Q_G	$V_{DS}=300V, V_{GS}=10V, I_D=7A,$ $I_G=1mA$ (Note 1, 2)	-	35	-	nC
Gate to Source Charge	Q_{GS}		-	7.4	-	nC
Gate to Drain Charge	Q_{GD}		-	12.6	-	nC
Turn-ON Delay Time (Note 1)	$t_{D(ON)}$	$V_{DD}=30V, V_{GS}=10V, I_D=0.5A,$ $R_G=25\Omega$ (Note 1, 2)	-	40	-	ns
Rise Time	t_R		-	102	-	ns
Turn-OFF Delay Time	$t_{D(OFF)}$		-	264	-	ns
Fall-Time	t_F		-	172	-	ns
Source-drain diode ratings and characteristics						
Maximum Body-Diode Continuous Current	I_S		-	-	7	A
Maximum Body-Diode Pulsed Current	I_{SM}		-	-	14	A
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=7.0A, V_{GS}=0V$	-	-	1.4	V
Body Diode Reverse Recovery Time	t_{rr}	$I_S=7.0A, V_{GS}=0V,$ $di_F/dt=100A/\mu s$	-	420	-	ns
Body Diode Reverse Recovery Charge	Q_{rr}		-	4	-	μC

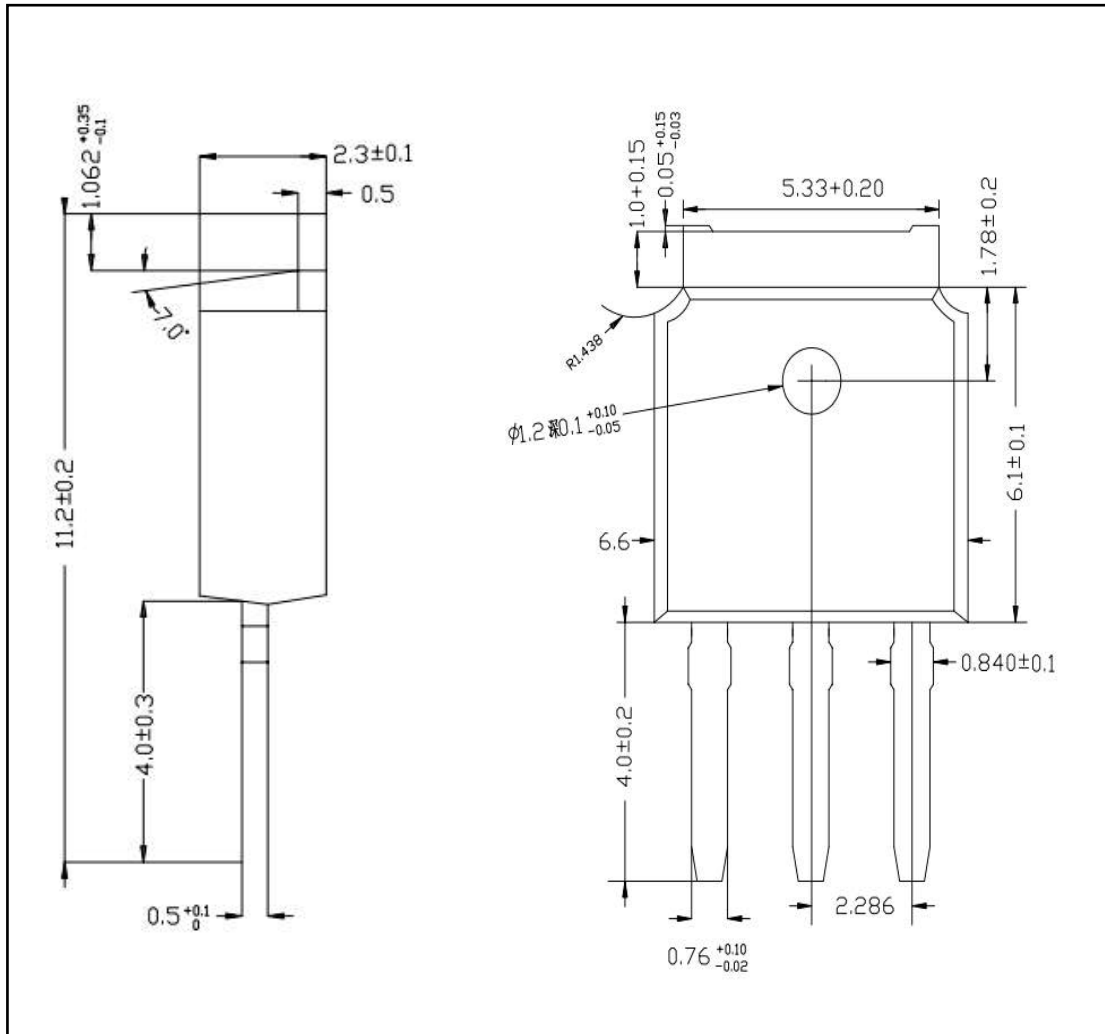
■ TYPICAL CHARACTERISTICS



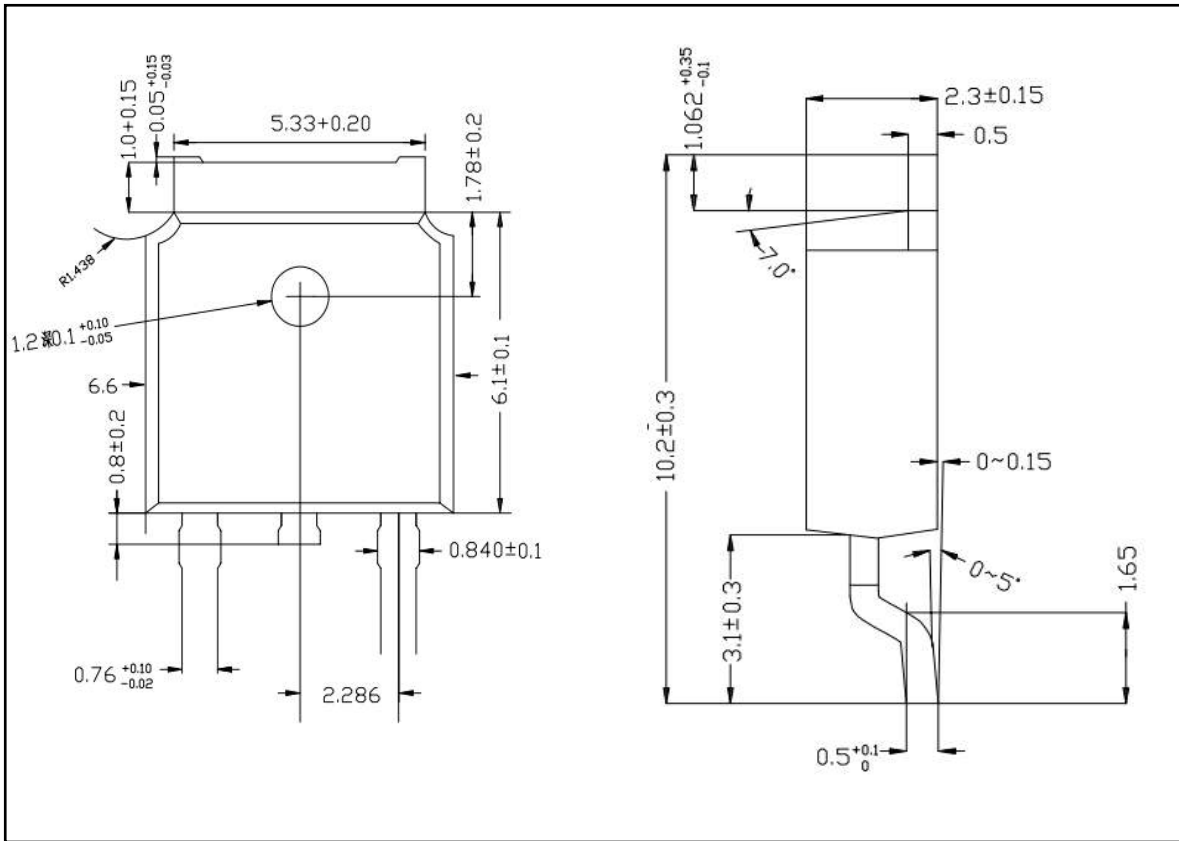
■ TYPICAL CHARACTERISTICS(Cont.)



■ TO-251 PACKAGE OUTLINE DIMENSIONS



■ TO-252 PACKAGE OUTLINE DIMENSIONS



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