

■ PRODUCT CHARACTERISTICS

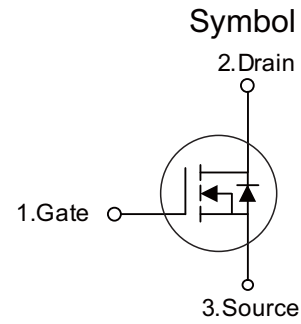
VDSS	700V
$R_{DS(on)Typ}(V_{GS}=10V)$	1.38Ω
Qg@type	35nC
ID	7A

■ 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

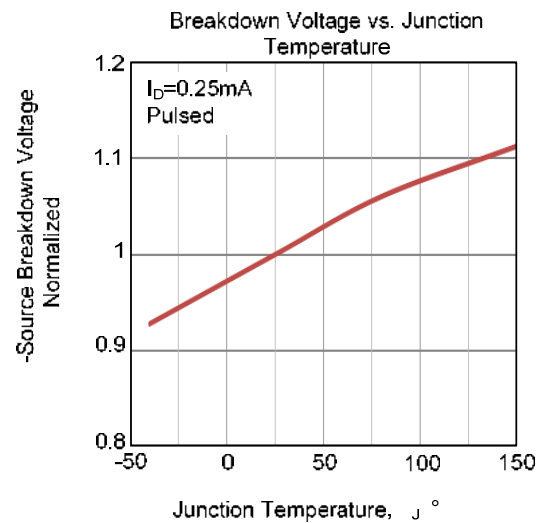
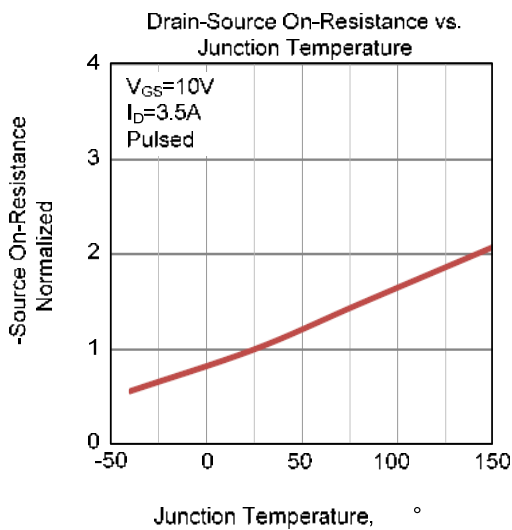
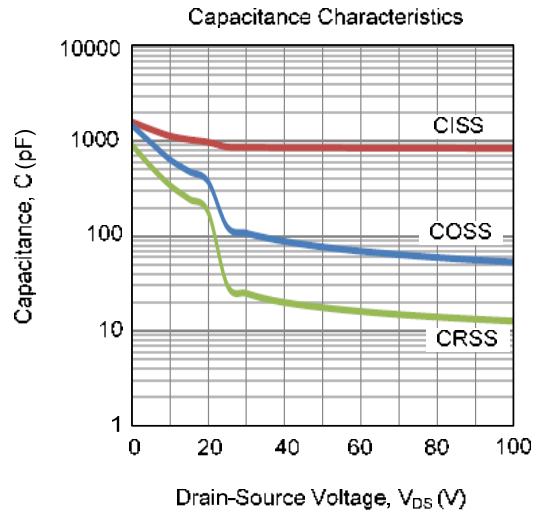
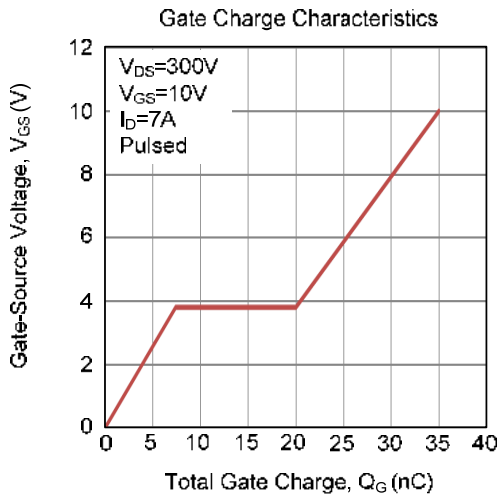
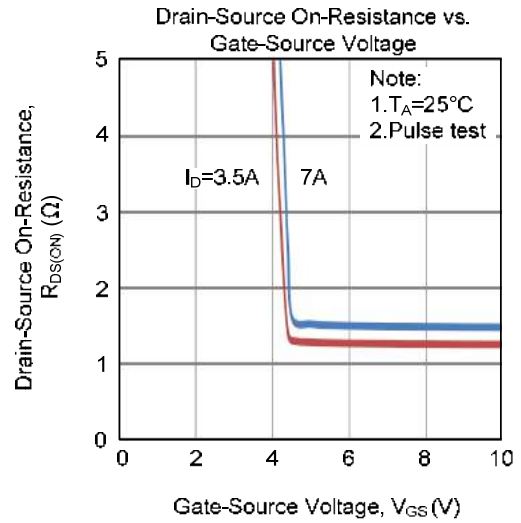
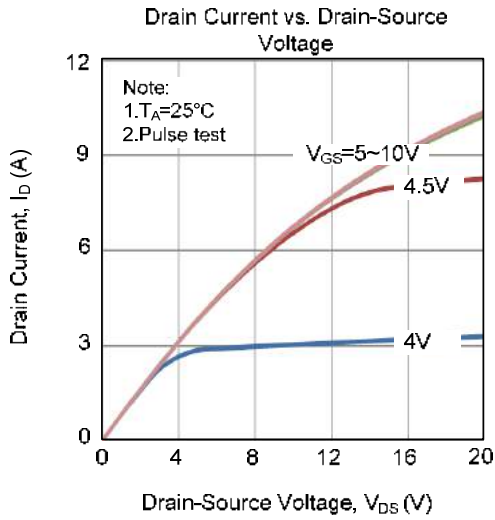
■ ABSOLUTE MAXIMUM RATINGS ( $T_C = 25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT	
Drain-Source Voltage	$V_{DSS}$	700	V	
Gate-Source Voltage	$V_{GSS}$	±30	V	
Drain Current	Continuous	$I_D$	7	A
	Pulsed	$I_{DM}$	14	A
Avalanche Energy	Single Pulsed	$E_{AS}$	480	mJ
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	

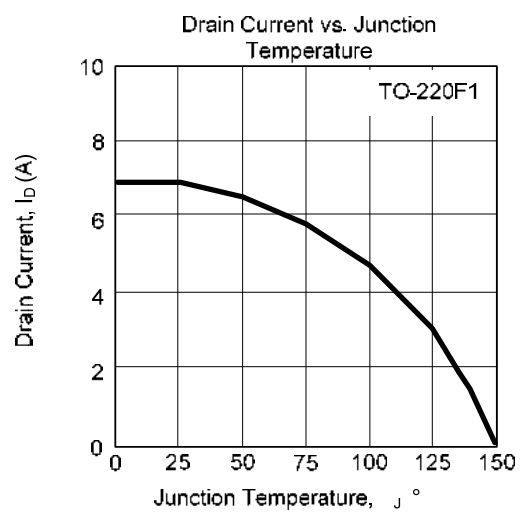
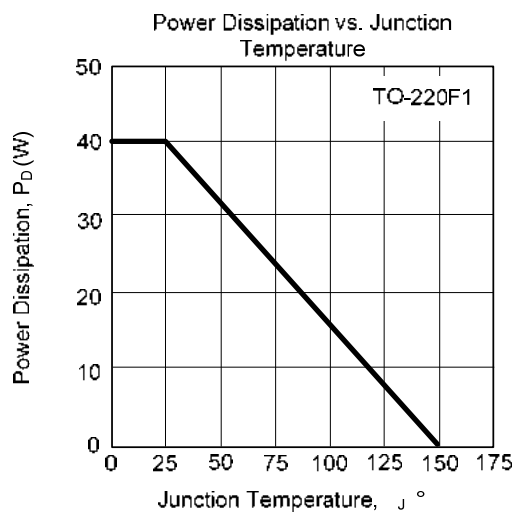
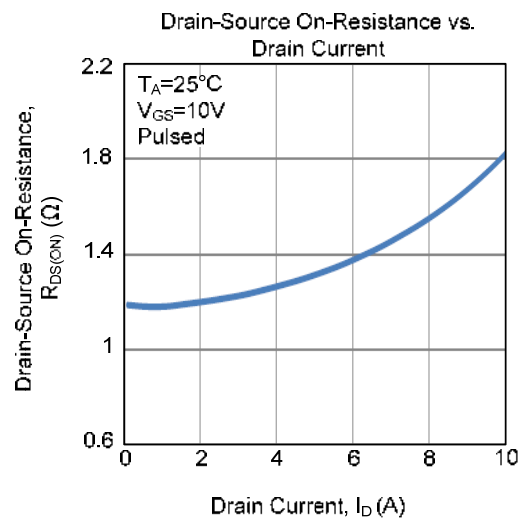
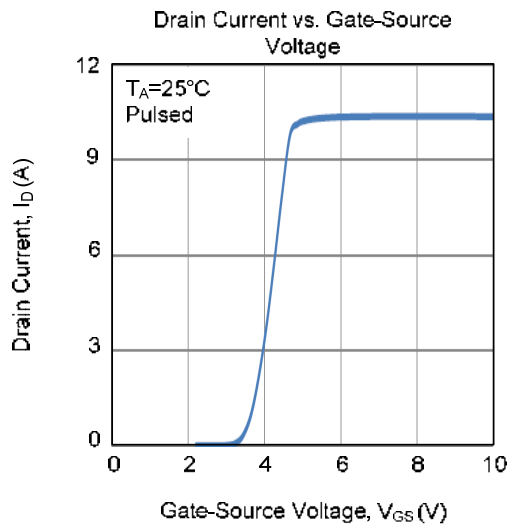
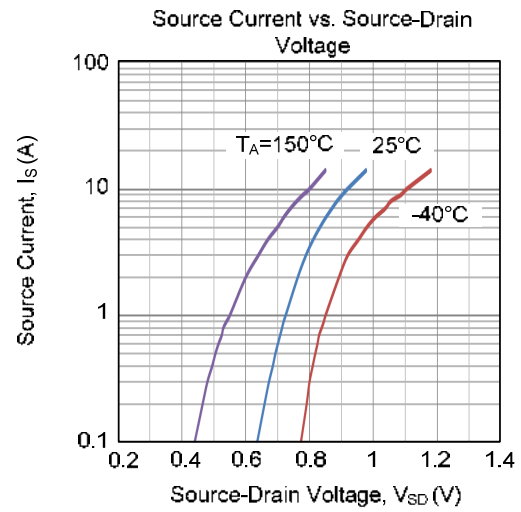
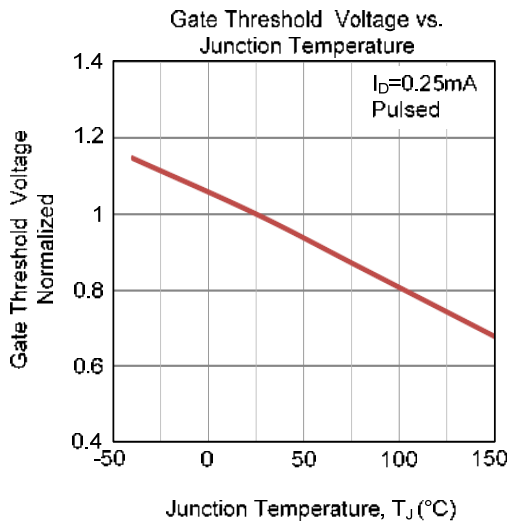
**■ ELECTRICAL CHARACTERISTICS** ( $T_C=25^{\circ}\text{C}$ , unless otherwise specified)

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	$\mu A$
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	$\Omega$
Dynamic characteristics						
Input Capacitance	$C_{ISS}$	$V_{GS}=0V, V_{DS}=25V, f=1.0\text{MHz}$	-	868	-	pF
Output Capacitance	$C_{OSS}$		-	125	-	pF
Reverse Transfer Capacitance	$C_{RSS}$		-	30	-	pF
Switching characteristics						
Total Gate Charge (Note 1)	$Q_G$	$V_{DS}=300V, V_{GS}=10V, I_D=7A, I_G=1\text{mA}$ (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	-	$\mu C$

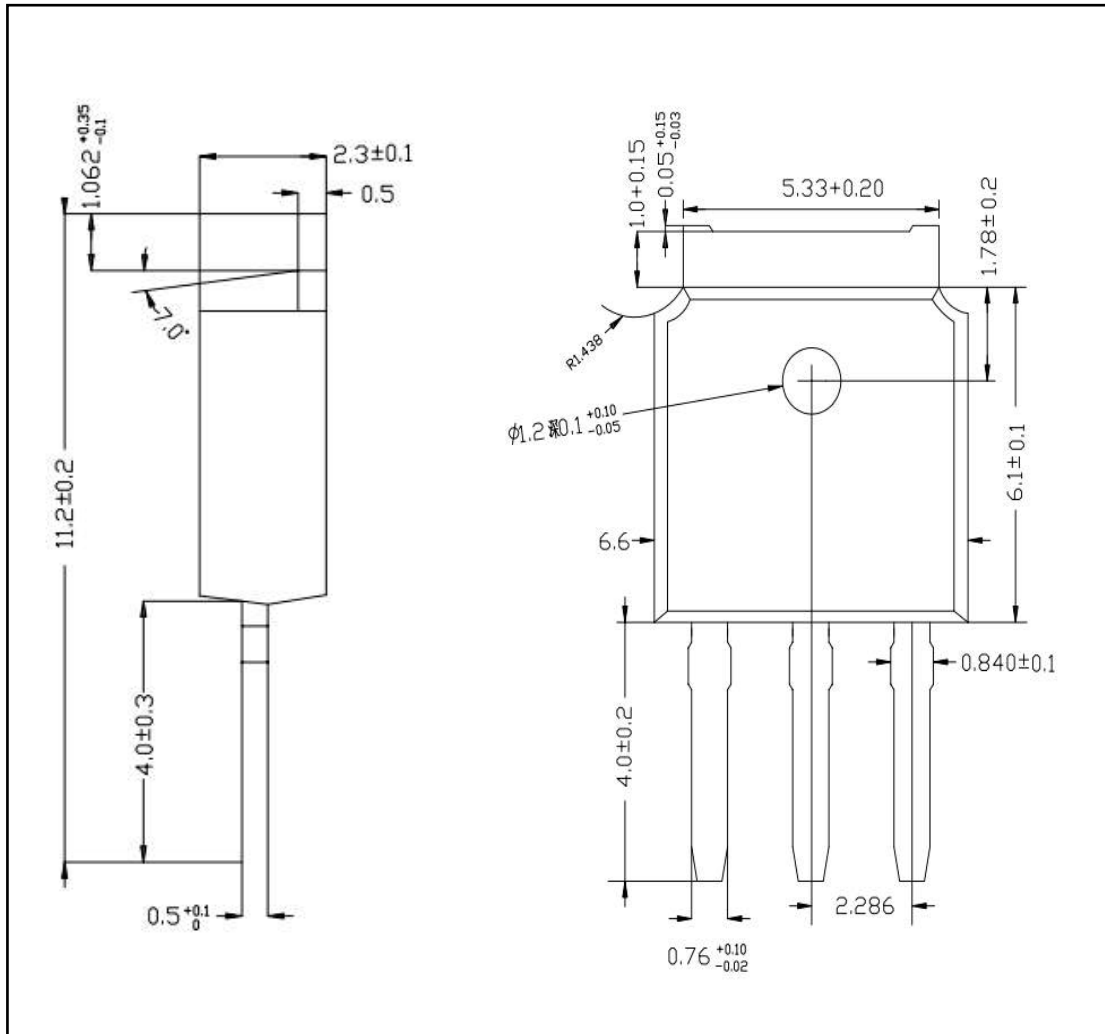
■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



■ TO-251 PACKAGE OUTLINE DIMENSIONS



■ TO-252 PACKAGE OUTLINE DIMENSIONS

