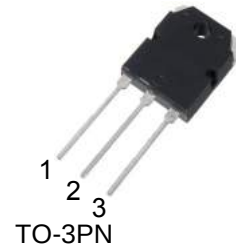
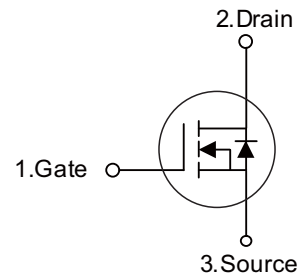


Symbol



PRODUCT CHARACTERISTICS

VDSS	650V
$R_{DS(on)}$ typ(@ $V_{GS}=10V$)	0.3Ω
Qg@type	54nC
ID	20A

APPLICATIONS

- High efficiency switch mode power supplies
- Electronic ballasts
- LED power supply

FEATURES

- * High Switching Speed
- * 100% Avalanche Tested

ORDER INFORMATION

Order codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT20N65P	TO-3PN	30 pieces/Tube

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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	650	V
Gate-Source Voltage		V_{GS}	±30	V
Drain Current	Continuous	I_D	20	A
	Pulsed (Note 2)	I_{DM}	40	A
Avalanche Energy	Single Pulsed (Note 3)	E_{AS}	562	mJ
Peak Diode Recovery dv/dt (Note 4)		dv/dt	2.46	V/ns
Power Dissipation		P_D	270	W
Junction Temperature		T_J	+150	°C
Storage Temperature		T_{STG}	-55 ~ +150	°C

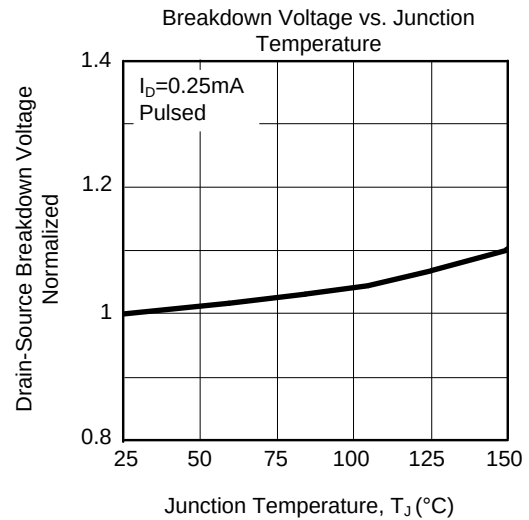
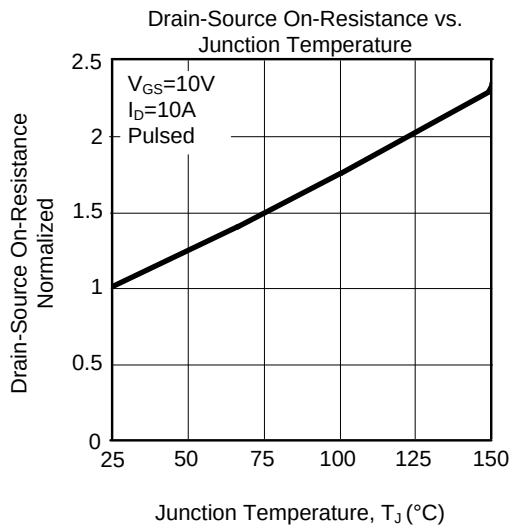
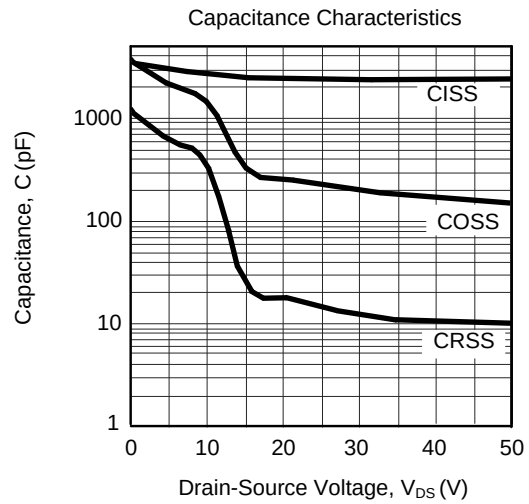
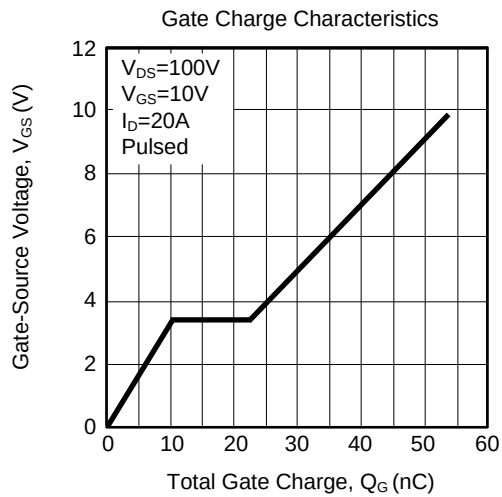
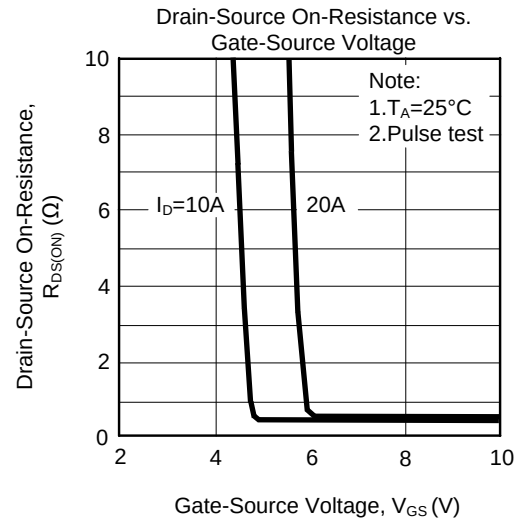
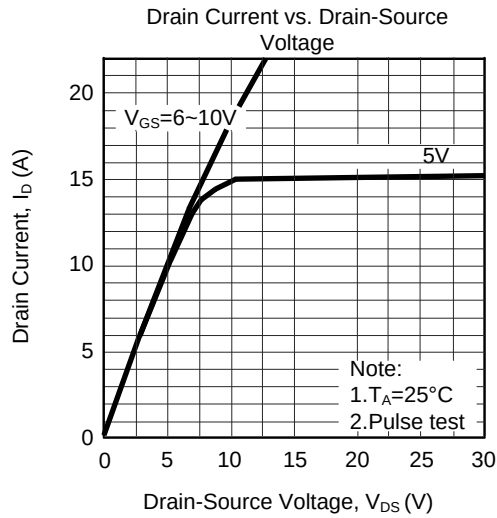
■ ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$, unless otherwise noted)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Off characteristics							
Drain-Source Breakdown Voltage		BV _{DSS}	V _{GS} =0V, I _D = 250μA	650	-	-	V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =650V, V _{GS} =0V	-	-	1	μA
Gate-Source Leakage Current	Forward	I _{GSS}	V _{GS} =30V, V _{DS} =0V	-	-	100	nA
	Reverse		V _{GS} =-30V, V _{DS} =0V	-	-	-100	nA
On characteristics							
Gate Threshold Voltage		V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	2.0	-	4.0	V
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =10A	-	0.3	0.36	Ω
Dynamic characteristics							
Input Capacitance		C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz	-	2512	-	pF
Output Capacitance		C _{OSS}		-	231	-	pF
Reverse Transfer Capacitance		C _{RSS}		-	14	-	pF
Switching characteristics							
Total Gate Charge (Note 1)		Q _G	V _{DS} =100V, V _{GS} =10V, I _D =20A I _G =1mA (Note 1, 2)	-	54	-	nC
Gateource Charge		Q _{GS}		-	10	-	nC
Gate-Drain Charge		Q _{GD}		-	13	-	nC
Turn-on Delay Time (Note 1)		t _{D(ON)}	V _{DS} =100V, V _{GS} =10V, I _D =20A, R _G =25Ω (Note 1, 2)	-	28	-	ns
Rise Time		t _R		-	35	-	ns
Turn-off Delay Time		t _{D(OFF)}		-	140	-	ns
Fall-Time		t _F		-	76	-	ns
Source-drain diode ratings and characteristics							
Maximum Body-Diode Continuous Current		I _S		-	-	20	A
Maximum Body-Diode Pulsed Current		I _{SM}		-	-	40	A
Drain-Source Diode Forward Voltage (Note 1)		V _{SD}	V _{GS} =0V, I _S =20A	-	-	1.4	V
Reverse Recovery Time (Note 1)		t _{rr}	V _{GS} =0V, I _S =20A,	-	506	-	ns
Reverse Recovery Charge		Q _{rr}	dI _F /dt=100A/μs (Note1)	-	9	-	μC

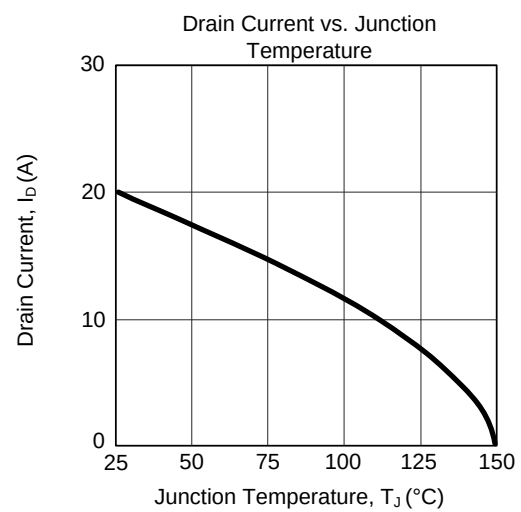
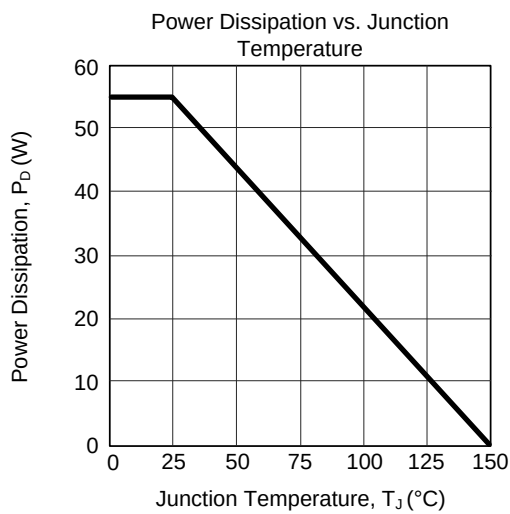
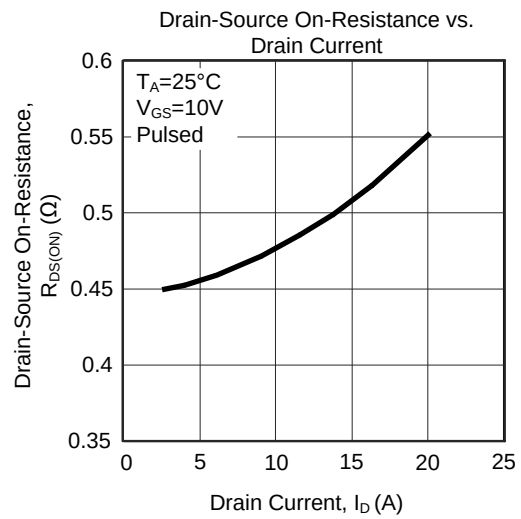
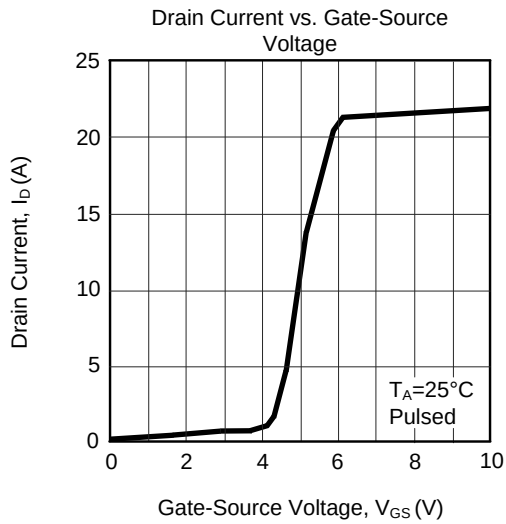
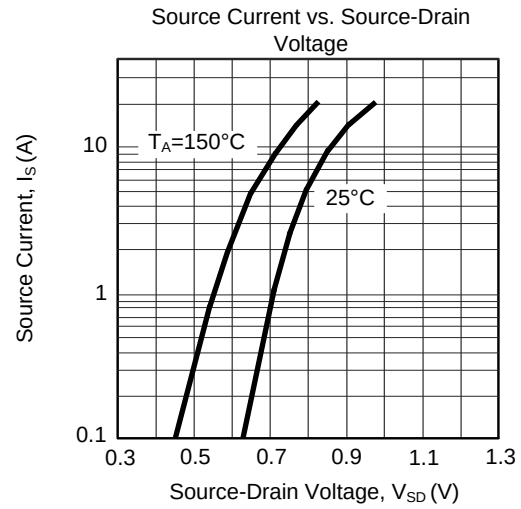
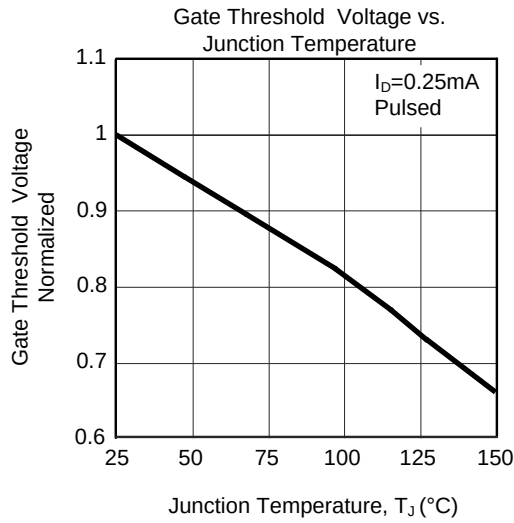
Notes: 1. Pulse Test : Pulse width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

2. Essentially independent of operating temperature.

■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



■ TO-3PN PACKAGE OUTLINE DIMENSIONS

