

PRODUCT CHARACTERISTICS

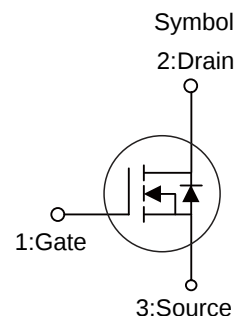
V_{DSS}	800V
$R_{DS(ON)}$ Typ(@ $V_{GS}=15V$)	125m Ω
Q_g @typ	33nC
I_D	28A

APPLICATIONS

- *Switch Mode Power Supplies
- *High Voltage DC/DC Converters
- *Battery Chargers
- *Motor Drivers

FEATURE

- *Low On-Resistance With High Blocking Voltage
- *Low Capacitances With High -Speed Switching
- *Low Reverse Recovery(Qrr)
- *Easy to Parallel and Simple to Drive



TO-220F



ORDER INFORMATION

Order Codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT80CH120HF	TO-220F	50 pieces/Tube

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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	800	V
Gate-Source Voltage	V_{GSS}	-10/+22	V
Recommended Operation Voltage Of Gate to Source	V_{GSOP}	0/+18	V
Drain Current Continuous(@ $V_{GS}=15V$, $T_c=25^{\circ}C$)	I_D	28	A
Drain Current Continuous(@ $V_{GS}=15V$, $T_c=175^{\circ}C$)	I_D	22	A
Drain Current Pulsed(@ $V_{GS}=15V$, $T_c=25^{\circ}C$)	I_{DM}	56	A
Power Dissipation	P_D	42	W
Junction Temperature	T_J	+175	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +175	$^{\circ}C$

THERMAL CHARACTERISTICS

Parameter	Symbol	Typ	Unit
Junction to Case	R_{thJC}	3.55	$^{\circ}C/W$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain to Source Breakdown Voltage	V _{DSS}	V _{GS} =0V, I _D =500μA	800	-	-	V
Drain to Source Leakage Current	I _{DSS}	V _{DS} =800V, V _{GS} =0V	-	-	10	μA
Gate to Source Forward Leakage	I _{GSS}	V _{DS} =0V, V _{GS} =18V	-	-	250	nA
On characteristics						
Drain to Source On-Resistance	R _{DS(ON)}	V _{GS} =15V, I _D =12A	-	125	165	mΩ
		V _{GS} =15V, I _D =12A, T _J =175°C	-	110	-	mΩ
		V _{GS} =18V, I _D =12A	-	93	-	mΩ
		V _{GS} =18V, I _D =12A, T _J =175°C	-	90	-	mΩ
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =5.2mA	2.7	-	4.5	V
Dynamic characteristics						
Gate Resistance	R _g	V _{AC} =25mV, f=1.0MHz	-	3.5	-	Ω
Input Capacitance	C _{iss}	V _{DS} =45V, V _{GS} =0V f=1.0MHz	-	775	-	pF
Output Capacitance	C _{oss}		-	170	-	pF
Reverse Transfer Capacitance	C _{rss}		-	9.4	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	t _{d(ON)}	I _D =12A, V _{DS} =500V R _G =2 Ω, V _{GS} =0/15V	-	16	-	ns
Rise Time	t _r		-	48	-	ns
Turn-off Delay Time	t _{d(OFF)}		-	21	-	ns
Fall Time	t _f		-	34	-	ns
Total Gate Charge	Q _g	I _D =12A, V _{DS} =500V V _{GS} =0/15V	-	33	-	nC
Gate to Source Charge	Q _{gs}		-	13	-	nC
Gate to Drain("Miller") Charge	Q _{gd}		-	13	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	I _s		-	-	28	A
Diode Forward Voltage	V _{SD}	I _{SD} =6A, V _{GS} =0V	-	3.2	-	V
Reverse Recovery Time	t _{rr}	I _{SD} =12A, T _J =25 °C dI/dt=1200A/μs	-	14	-	ns
Reverse Recovery Charge	Q _{rr}		-	56	-	nC

■ TYPICAL CHARACTERISTICS

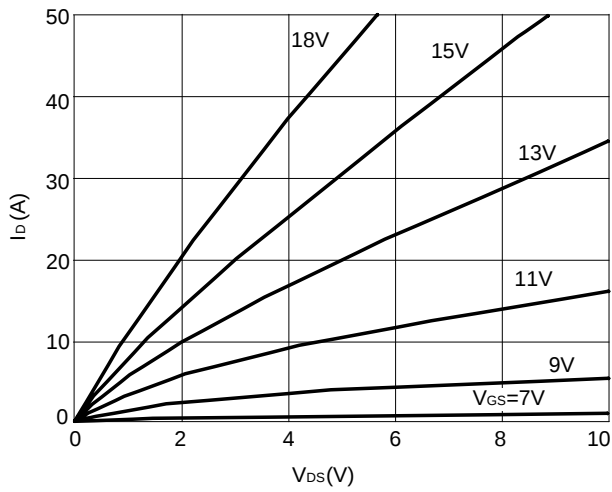


Figure 1: Output Characteristics($T_J = 25^\circ\text{C}$)

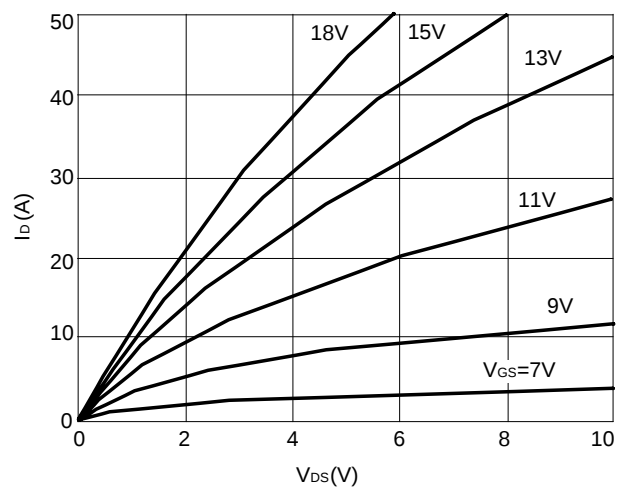


Figure 2: Output Characteristics($T_J = 175^\circ\text{C}$)

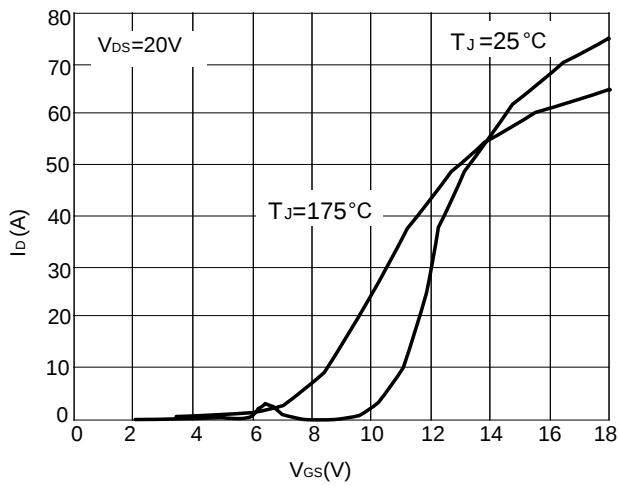


Figure 3: Typical Transfer Characteristics

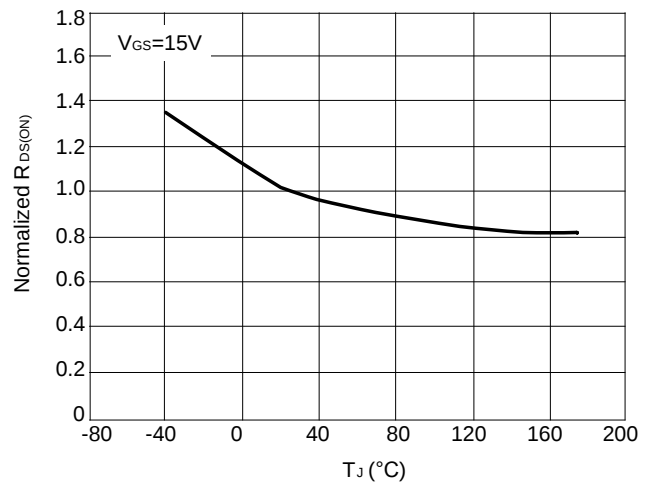


Figure 4: Normalized On-Resistance vs Temperature

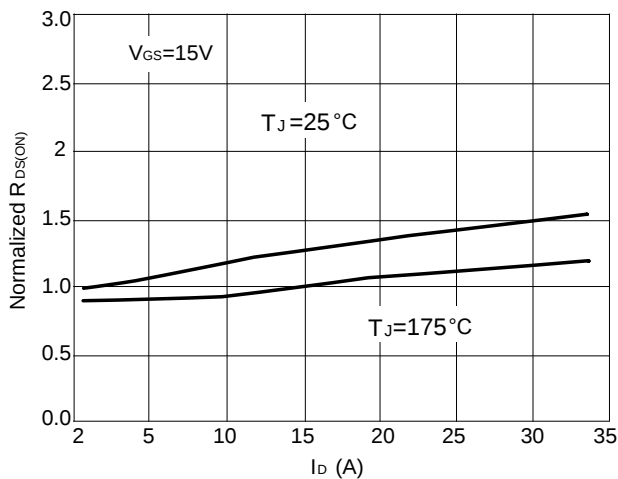


Figure 5: Normalized On-Resistance vs. Drain Current For Various Temperature

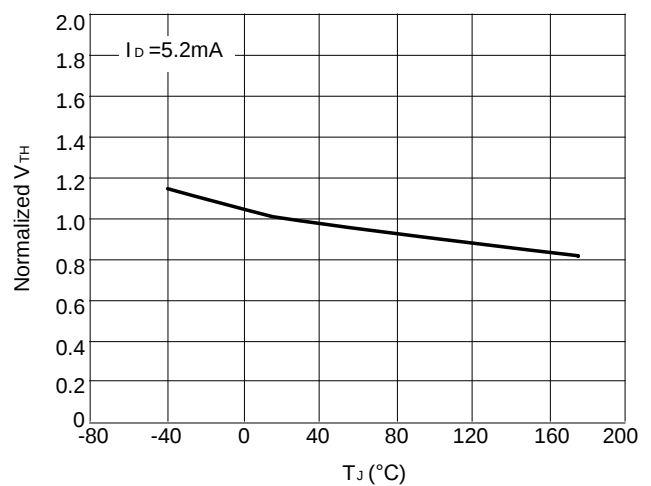


Figure 6: Normalized Threshold Voltage vs. Temperature

■ TYPICAL CHARACTERISTICS(Cont.)

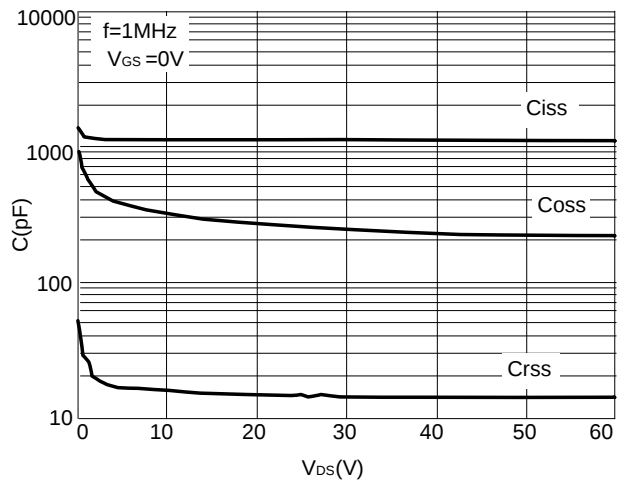


Figure 7: Capacitance vs. Drain-Source Voltage

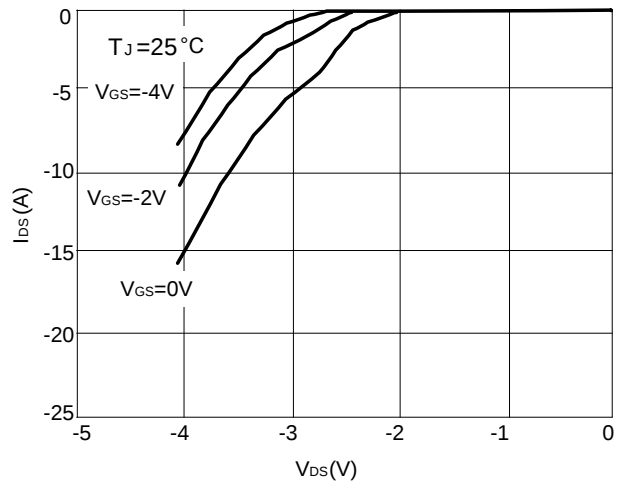


Figure 8: Body Diode Characteristics

■ TO-220F PACKAGE OUTLINE DIMENSIONS

