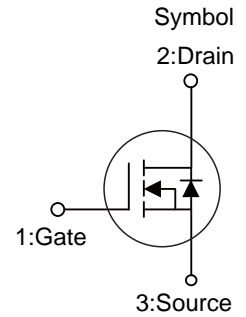


■ PRODUCT CHARACTERISTICS

V <sub>DSS</sub>	800V
R <sub>DS(ON)</sub> Typ(@V <sub>GS</sub> =15V)	90mΩ
Qg@typ	41nC
I <sub>D</sub>	36A

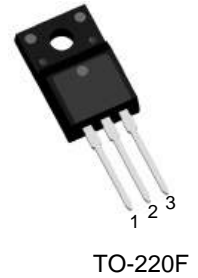


■ APPLICATIONS

- \*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



■ ORDER INFORMATION

Order Codes		Package	Packing
Halogen-Free	Halogen		
N/A	MOT80CH090HF	TO-220F	50 pieces/Tube

■ ABSOLUTE MAXIMUM RATINGS(T<sub>A</sub>=25°C,unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V <sub>DSS</sub>	800	V
Gate-Source Voltage	V <sub>GSS</sub>	-10/+22	V
Recommended Operation Voltage Of Gate to Source	V <sub>GSOP</sub>	0/+18	V
Drain Current Continuous(@V <sub>GS</sub> =15V ,T <sub>C</sub> =25°C )	I <sub>D</sub>	36	A
Drain Current Continuous(@V <sub>GS</sub> =15V ,T <sub>C</sub> =175 °C )	I <sub>D</sub>	27	A
Drain Current Pulsed(@V <sub>GS</sub> =15V ,T <sub>C</sub> =25°C )	I <sub>DM</sub>	72	A
Power Dissipation	P <sub>D</sub>	50	W
Junction Temperature	T <sub>J</sub>	+175	°C
Storage Temperature	T <sub>STG</sub>	-55~ +175	°C

■ THERMAL CHARACTERISTICS

Parameter	Symbol	Typ	Unit
Junction to Case	R <sub>thJC</sub>	3	°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	$V_{DSS}$	$V_{GS}=0V, I_D=500\mu A$	800	-	-	V
Drain to Source Leakage Current	$I_{DSS}$	$V_{DS}=800V, V_{GS}=0V$	-	-	10	$\mu A$
Gate to Source Forward Leakage	$I_{GSS}$	$V_{DS}=0V, V_{GS}=18V$	-	-	250	nA
On characteristics						
Drain to Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=15V, I_D=17A$	-	90	120	m $\Omega$
		$V_{GS}=15V, I_D=17A, T_j=175^{\circ}\text{C}$	-	77	-	m $\Omega$
		$V_{GS}=18V, I_D=17A$	-	63	-	m $\Omega$
		$V_{GS}=18V, I_D=17A, T_j=175^{\circ}\text{C}$	-	65	-	m $\Omega$
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=7.5mA$	2.7	-	4.5	V
Dynamic characteristics						
Gate capacitance	$R_g$	$V_{AC}=25mV, f=1.0MHz$	-	3	-	$\Omega$
Input Capacitance	$C_{iss}$	$V_{DS}=45V, V_{GS}=0V$ $f=1.0MHz$	-	1100	-	pF
Output Capacitance	$C_{oss}$		-	228	-	pF
Reverse Transfer Capacitance	$C_{rss}$		-	15	-	pF
Resistive Switching Characteristics						
Turn-on Delay Time	$t_{d(ON)}$	$I_D=17A, V_{DS}=500V$ $R_G=2\Omega, V_{GS}=0/15V$	-	19	-	ns
Rise Time	$t_r$		-	115	-	ns
Turn-off Delay Time	$t_{d(OFF)}$		-	31	-	ns
Fall Time	$t_f$		-	34	-	ns
Total Gate Charge	$Q_g$	$I_D=17A, V_{DS}=500V$ $V_{GS}=0/15V$	-	41	-	nC
Gate to Source Charge	$Q_{gs}$		-	10	-	nC
Gate to Drain("Miller") Charge	$Q_{gd}$		-	16	-	nC
Source-Drain Diode Characteristics						
Continuous Source Current(Body Diode)	$I_S$		-	-	28	A
Diode Forward Voltage	$V_{SD}$	$I_{SD}=8.5A, V_{GS}=0V$	-	3.7	-	V
Reverse Recovery Time	$t_{rr}$	$I_{SD}=17A, T_j=25^{\circ}\text{C}$ $di/dt=550A/\mu s$	-	63	-	ns
Reverse Recovery Charge	$Q_{rr}$		-	56	-	nC

■ TYPICAL CHARACTERISTICS

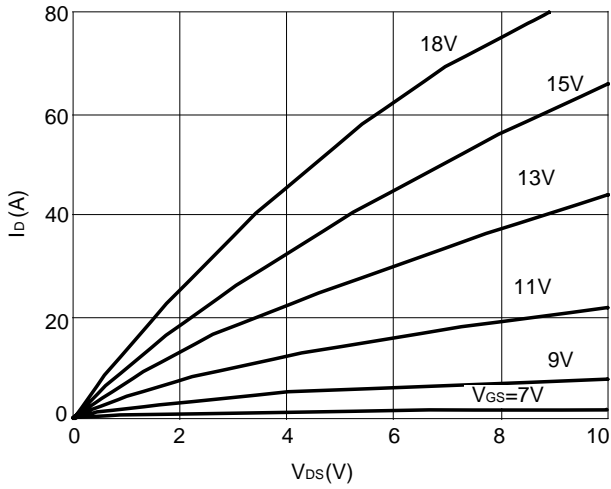


Figure 1: Output Characteristics( $T_J=25^\circ\text{C}$ )

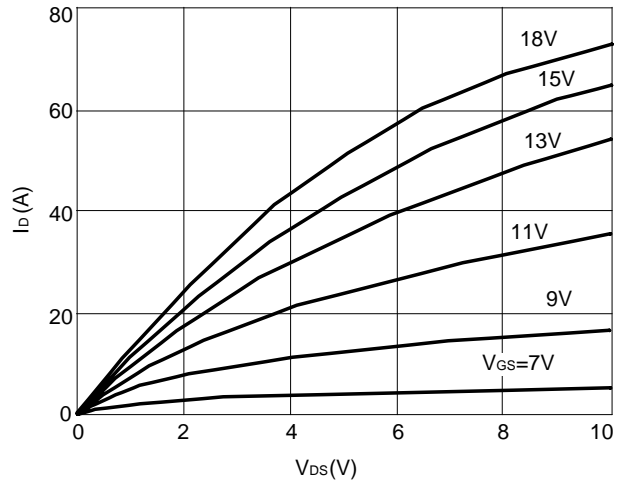


Figure 2: Output Characteristics( $T_J=175^\circ\text{C}$ )

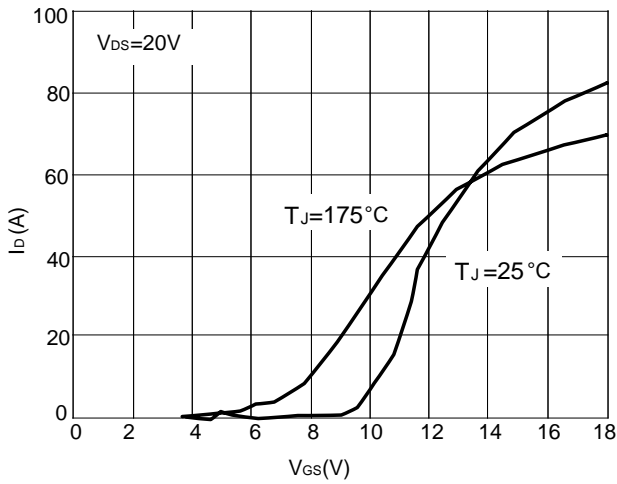


Figure 3: Typical Transfer Characteristics

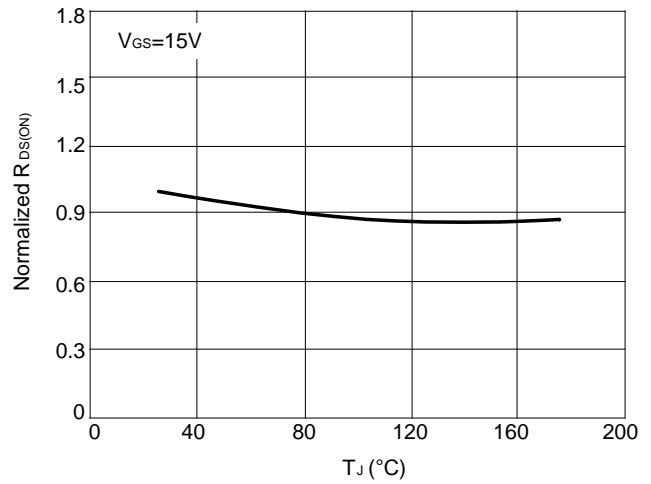


Figure 4: Normalized On-Resistance vs Temperature

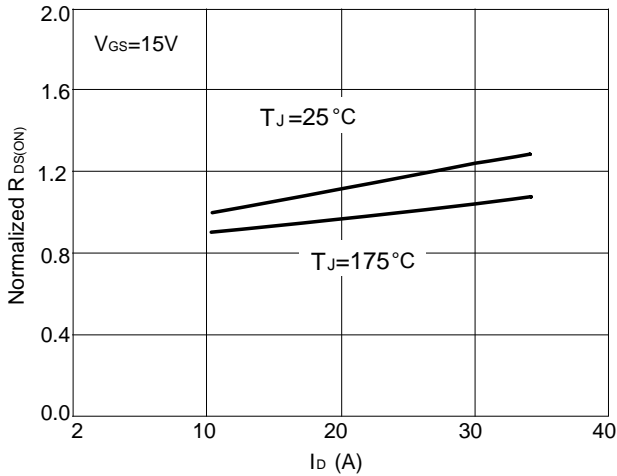


Figure 5: Normalized On-Resistance vs. Drain Current For Various Temperature

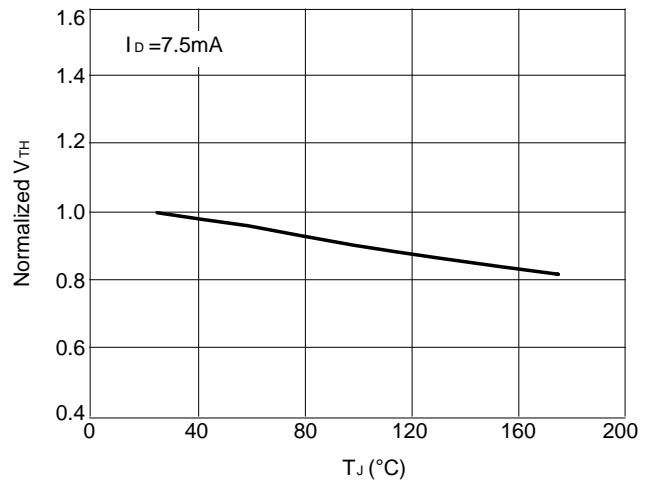


Figure 6: Normalized Threshold Voltage vs. Temperature

■ TYPICAL CHARACTERISTICS(Cont.)

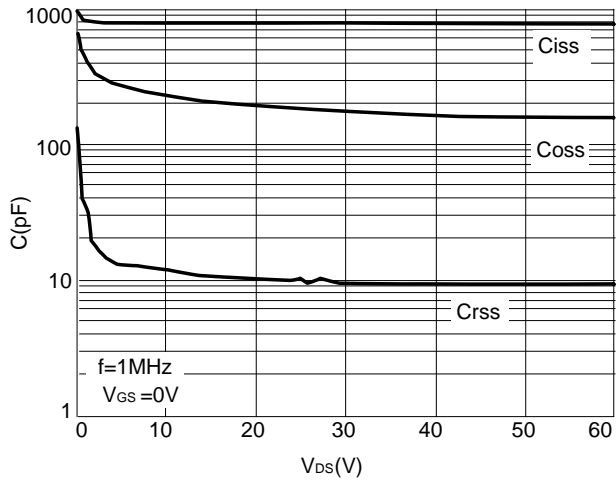


Figure 7: Capacitance vs. Drain-Source Voltage

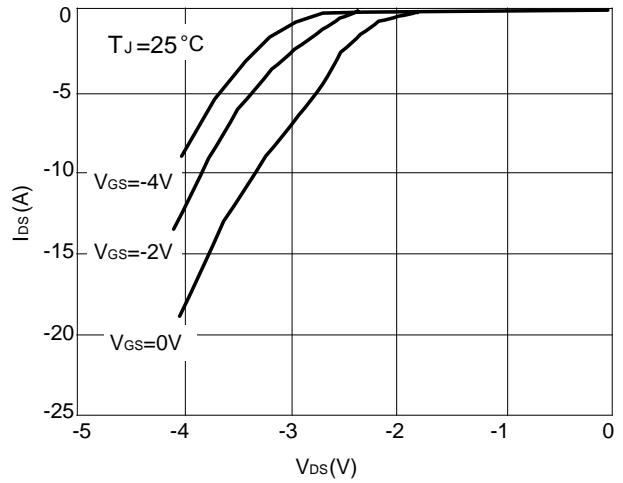


Figure 8: Body Diode Characteristics

■ TO-220F PACKAGE OUTLINE DIMENSIONS

