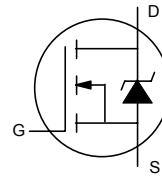
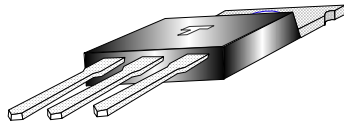




IRF840

Power MOSFET

$V_{DSS} = 500V$, $R_{DS(on)} = 0.85 \text{ ohm}$, $I_D = 8.0 \text{ A}$



N Channel

Symbol

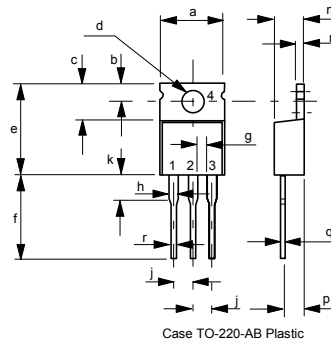
ELECTRICAL CHARACTERISTICS at $T_J = 25^\circ\text{C}$ Maximum. Unless stated Otherwise						
Parameter	Symbol	Test Conditions	Value			Unit
			Min	Typ	Max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0 \text{ V}_{DC}$, $I_D = 250\mu\text{A}$	500	-	-	Volt
Drain to Source Leakage Current	I_{DSS}	$V_{DS} = 500\text{V}_{DC}$, $V_{GS} = 0\text{V}_{DC}$	-	-	25	μA
		$V_{DS} = 400\text{V}_{DC}$, $V_{GS} = 0\text{V}_{DC}$, $T_J = 125^\circ\text{C}$	-	-	250	μA
Gate to Source Leakage Current	I_{GSS}	$V_{GS} = +20\text{V}_{DC}$	-	-	100	nA
		$V_{GS} = -20\text{V}_{DC}$	-	-	-100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\mu\text{A}$	2.0	-	4.0	Volt
Static Drain to Source On - Resistance	$R_{DS(on)}$	$V_{GS} = 10\text{V}_{DC}$, $I_D = 4.8\text{A}$	-	-	0.85	Ω
Gate Charge	Q_G	$I_D = 8.0\text{A}$	-	-	63	nC
Gate to Source Charge	Q_{GS}	$V_{DS} = 400\text{V}_{DC}$, $V_{GS} = 10\text{V}_{DC}$	-	-	9.3	nC
Gate to Drain Charge	Q_{GD}	$V_{DS} = 400\text{V}_{DC}$, $V_{GS} = 10\text{V}_{DC}$	-	-	3.2	nC
Input Capacitance	C_{iss}	$V_{DS} = 25\text{V}_{DC}$, $V_{GS} = 0\text{V}_{DC}$, $f = 1.0\text{MHz}$	-	1300	-	pF
Output Capacitance	C_{oss}	$V_{DS} = 25\text{V}_{DC}$, $V_{GS} = 0\text{V}_{DC}$, $f = 1.0\text{MHz}$	-	310	-	pF
Transfer Capacitance	C_{riss}	$V_{DS} = 25\text{V}_{DC}$, $V_{GS} = 0\text{V}_{DC}$, $f = 1.0\text{MHz}$	-	120	-	pF
Turn On Delay Time	$t_{d(on)}$	$V_{DD} = 250\text{V}_{DC}$, $I_D = 8.0\text{A}$, $R_G = 9.1\Omega$	-	14	-	nS
Turn Off Delay Time	$t_{d(off)}$	$V_{DD} = 250\text{V}_{DC}$, $I_D = 8.0\text{A}$, $R_G = 9.1\Omega$	-	49	-	nS
Rise Time	t_r	$V_{DD} = 250\text{V}_{DC}$, $I_D = 8.0\text{A}$, $R_G = 9.1\Omega$	-	23	-	nS
Fall Time	t_f	$V_{DD} = 250\text{V}_{DC}$, $I_D = 8.0\text{A}$, $R_G = 9.1\Omega$	-	20	-	nS
Continuous Source Current	I_S	$V_{GS} = 0\text{V}_{DC}$, $I_S = 8.0\text{A}$, $T_p = 300\mu\text{S}$	-	-	8.0	A
Pulsed Source Current	I_{SM}	$V_{GS} = 0\text{V}_{DC}$, $I_S = 8.0\text{A}$, $T_p = 300\mu\text{S}$	-	-	32	A
Forward Voltage (Diode)	V_{SD}	$V_{GS} = 0\text{V}_{DC}$, $I_S = 8.0\text{A}$, $T_p = 300\mu\text{S}$	-	-	2.0	V

MAXIMUM RATINGS ($T_J = 25^\circ\text{C}$ unless stated otherwise)				
Parameter	Symbol	Condition	Value	Unit
Gate to Source Voltage	V_{GS}		+/- 20V	Volt
Drain to Source Voltage	V_{DSS}		500	Volt
Continuous Drain Current	I_D		8.0	Amp
Pulsed Drain Current	I_{DM}	-	32	Amp
Total Power Dissipation	P_D	($T_A = 25^\circ\text{C}$)	125	W
Thermal Resistance (Junction to Ambient)	$R_{TH(j-A)}$		62	$^\circ\text{C/W}$

Maximum Operating Temperature Range (T_J) -55 to +150 $^\circ\text{C}$
Maximum Storage Temperature Range (T_{stg}) -55 to +150 $^\circ\text{C}$

Mechanical Dimensions

Dim	Millimetres		Inches	
	Min	Max	Min	Max
a	10.29	10.54	0.405	0.415
b	2.62	2.87	0.103	0.113
c	6.10	6.47	0.240	0.255
d	3.54	3.78	0.139	0.149
e	14.84	15.24	0.584	0.600
f	13.47	14.09	0.530	0.555
g	1.15		0.045	
h	1.15	1.400	0.045	0.055
j		2.54		0.100
k	3.550	4.06	0.140	0.160
m	4.20	4.69	0.165	0.185
n	1.22	1.32	0.048	0.052
p	2.64	2.92	0.104	0.115
q	0.48	0.55	0.018	0.022
r	0.69	0.93	0.027	0.037



- 1 - Gate
- 2 & 4 - Drain
- 3 - Source

Case TO-220-AB Plastic