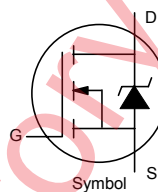
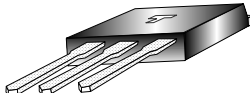




# IRF840AS/AL

Power MOSFET

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



N Channel

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	$\mu\text{A}$
		$V_{DS} = 400\text{V}_{DC}$ , $V_{GS} = 0\text{V}_{DC}$ , $T_j = 125^\circ\text{C}$	-	-	250	
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS} = +30\text{V}_{DC}$	-	-	100	nA
		$V_{GS} = -30\text{V}_{DC}$	-	-	-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	$\Omega$
Gate Charge	$Q_G$	$I_D = 8.0\text{A}$	-	-	38	nC
Gate to Source Charge	$Q_{GS}$	$V_{DS} = 400\text{V}_{DC}$ , $V_{GS} = 10\text{V}_{DC}$	-	-	9.0	nC
Gate to Drain Charge	$Q_{GD}$		-	-	18	nC
Input Capacitance	$C_{ISS}$		-	1018	-	pF
Output Capacitance	$C_{OSS}$	$V_{DS} = 25\text{V}_{DC}$ , $V_{GS} = 0\text{V}_{DC}$ , $f = 1.0\text{MHz}$	-	155	-	pF
Transfer Capacitance	$C_{RSS}$		-	8.0	-	pF
Turn On Delay Time	$t_{d(on)}$		-	11	-	nS
Turn Off Delay Time	$t_{d(off)}$	$V_{DD} = 250\text{V}_{DC}$ , $I_D = 8.0\text{A}$ , $R_G = 9.1\Omega$	-	26	-	nS
Rise Time	$t_r$	$R_D = 31\Omega$	-	23	-	nS
Fall Time	$t_f$		-	19	-	nS
Continuous Source Current	$I_S$		-	-	8.0	A
Pulsed Source Current	$I_{SM}$		-	-	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
Single Pulse Avalanche Energy	$E_{AS}$				510	mJ
Repetive Avalanche Energy	$E_{AR}$				13	mJ
Avalanche Current	$I_{AR}$				8	A

MAXIMUM RATINGS ( $T_j = 25^\circ\text{C}$ unless stated otherwise)				
Parameter	Symbol	Condition	Value	Unit
Gate to Source Voltage	$V_{GS}$		+/- 30V	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)	$R_{TH(j-a)}$		40	$^\circ\text{C/W}$

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



# IRF840AS/AL

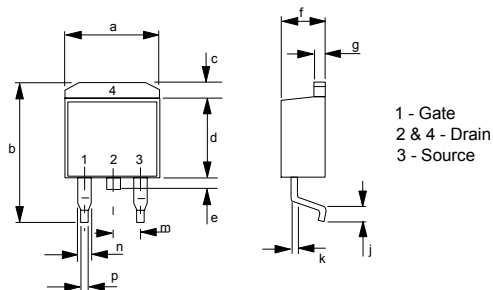
Power MOSFET

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

## Mechanical Dimensions

Case SMB 220 Plastic

Dim	Millimetres		Inches	
	Min	Max	Min	Max
a	9.85	10.67	0.380	0.420
b	14.61	15.88	0.575	0.625
c		1.65		0.065
d	8.51	9.65	0.335	0.380
e	1.27	1.78	0.050	0.070
f	4.08	4.83	0.180	0.190
g	1.14	1.40	0.045	0.055
h	1.15	1.400	0.045	0.055
j	1.78	2.79	0.070	0.110
k	0.38	0.77	0.015	0.029
m		2.54 Pitch		0.10 Pitch
n	0.51	0.99	0.020	0.038
p	0.51	0.89	0.020	0.35



## Mechanical Dimensions

Case TO262 Plastic

Dim	Millimetres		Inches	
	Min	Max	Min	Max
a	10.29	10.54	0.405	0.415
b	9.91	10.54	0.390	0.415
c	13.47	14.09	0.530	0.555
d	1.15		0.045	
e	1.15	1.40	0.045	0.055
f	0.69	0.93	0.027	0.037
g		2.54 Pitch		0.10 Pitch
h	4.20	4.69	0.165	0.185
j	1.22	1.32	0.048	0.052
k	0.46	0.55	0.018	0.022
m	2.64	2.92	0.104	0.115
n	3.55	4.06	0.140	0.160

