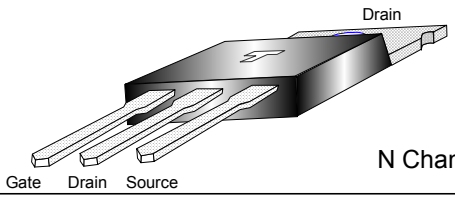
Transys Electronics LIMITED

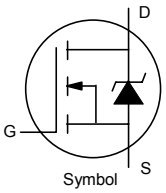
IRF840A

Power MOSFET

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



N Channel



ELECTRICAL CHARACTERISICS at Tj = 25°C Maximum. Unless stated Otherwise

Parameter	Symbol	Test Conditions	Value Min	Value Typ	Value Max	Unit
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0 V_{DC}, I_D = 250µA	500	-	-	Volt
Drain to Source Leakage Current	I_{DSS}	V_{DS} = 500V_{DC}, V_{GS} = 0V_{DC}	-	-	25	µA
		V_{DS} = 400V_{DC}, V_{GS} = 0V_{DC} Tj=125 °C	-	-	250	µA
Gate to Source Leakage Current	I_{GSS}	V_{GS} = +30V_{DC}	-	-	100	nA
		V_{GS} = -30V_{DC}	-	-	-100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250µA	2.0	-	4.0	Volt
Static Drain to Source On - Resistance	$R_{DS(on)}$	V_{GS}= 10V_{DC}, I_D = 4.8A	-	-	0.85	Ω
Gate Charge	Q_G	I_D = 8.0A	-	-	38	nC
Gate to Source Charge	Q_{GS}	V_{DS} = 400V_{DC},	-	-	9.0	nC
Gate to Drain Charge	Q_{GD}	V_{GS} = 10V_{DC}	-	-	18	nC
Input Capacitance	C_{ISS}		-	1018	-	pF
Output Capacitance	C_{OSS}	V_{DS} = 25V_{DC}, V_{GS}= 0V_{DC}, f = 1.0MHZ	-	155	-	pF
Transfer Capacitance	C_{RSS}		-	8.0	-	pF
Turn On Delay Time	$td_{(on)}$		-	11	-	nS
Turn Off Delay Time	$td_{(off)}$	V_{DD} = 250V_{DC}, I_D = 8.0A, R_G = 9.1Ω	-	26	-	nS
Rise Time	tr	R_D = 31Ω	-	23	-	nS
Fall Time	tf		-	19	-	nS
Continuous Source Current	I_S		-	-		A
Pulsed Source Current	I_{SM}		-	-	32	A
Forward Voltage (Diode)	V_{SD}	V_{GS} = 0V_{DC}, I_S =8.0A, Tp = 300µS	-	-	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 (Tj = 25°C unless stated otherwise)

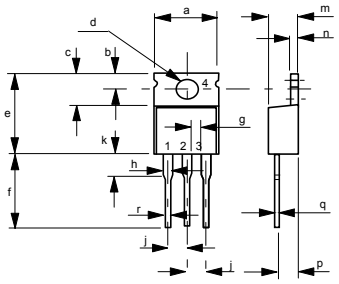
Parameter	Symbol	Condition	Value	Unit
Gate to Source Voltage	V_{GS}		+/- 30V	Volt
Drain to Source Voltage	V_{DSS}		500	Volt
Continuous Drain Current	I_D		8.0	Amp
Pulsed Drain Current	I_{DM}	_	32	Amp
Total Power Dissapation	P_D	(T_A = 25 C)	125	W
Thermal Resistance (Junction to Ambient)	$R_{TH\ (J-A)}$		62	°C/W

Maximum Operating Temperature Range (Tj) -55 to +150° C
Maximum Storage Temperature Range (Tstg) -55 to +150° C

Mechanical Dimensions

Case TO-220-AB Plastic

DIMENSIONS				
	Millimetres		Inches	
Dim	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