

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D@25^{\circ}C$
900V	84mΩ@18V	46A

Feature

- High Blocking Voltage With Low On-Resistance
- High Speed Switching With Low Capacitance
- Fast Intrinsic Diode with Low Reverse Recovery (Qrr)

Application

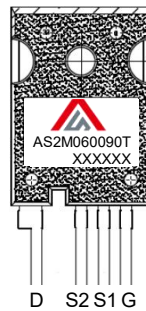
- EV Charging
- Server Power Supplies
- Solar PV Inverters
- UPS
- DC/DC Converters

Package



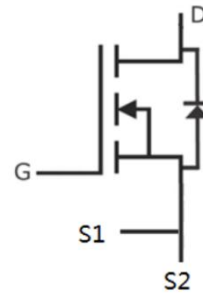
TO-247-4

Marking



D S2 S1 G

Circuit diagram



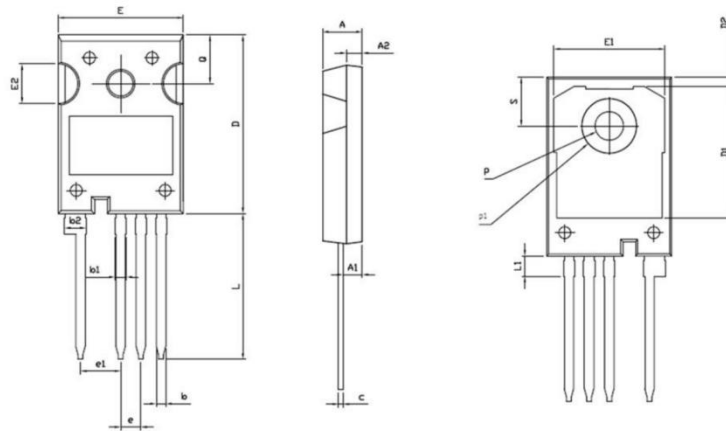
Absolute maximum ratings ($T_C=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Test Condition	Value	Unit
Drain-Source Voltage	V_{DSmax}	$V_{GS} = 0V, I_D = 100\mu A$	900	V
Gate-Source Voltage	V_{GSmax}	Absolute maximum values	-8/+22	V
Gate-Source Voltage	V_{GSOP}	Recommended operational values	-4/+18	V
Continuous Drain Current	I_D	$V_{GS}=18V, T_C=25^{\circ}C$	46	A
	I_D	$V_{GS}=18V, T_C=100^{\circ}C$	32	A
Power Dissipation	P_D	$T_C=25^{\circ}C$	221	W
Thermal Resistance (Typ)	$R_{\theta JC}$	Junction-to-Case	0.68	$^{\circ}C/W$
Junction Temperature	T_J		-55~ +175	$^{\circ}C$
Storage Temperature	T_{STG}		-55~ +175	$^{\circ}C$

Electrical characteristics (T_c=25°C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 100μA	900			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 900V, V _{GS} = 0V			50	μA
Gate-Source leakage current	I _{GSS}	V _{GS} = -8/+22V, V _{DS} = 0V			250	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 5mA	1.8	2.6	4.0	V
		V _{DS} = V _{GS} , I _D = 5mA, T _j = 175°C		1.8		V
Drain-source on-resistance	R _{DS(on)}	V _{GS} = 18V, I _D = 20A		60	84	mΩ
		V _{GS} = 18V, I _D = 20A, T _j = 175°C		76		mΩ
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} = 450V, V _{GS} = 0V, f = 1MHz V _{AC} = 25mV		1800		pF
Output Capacitance	C _{oss}			115		
Reverse Transfer Capacitance	C _{rss}			15		
Total Gate Charge	Q _g	V _{DS} = 720V, V _{GS} = -4V/18V, I _D = 20A		90		nC
Gate-Source Charge	Q _{gs}			30		
Gate-Drain Charge	Q _{gd}			28		
Turn-on delay time	t _{d(on)}	V _{DS} = 720V, V _{GS} = -4V/18V, I _D = 20A, R _{g(ext)} = 2.5Ω, R _L = 36Ω		18		nS
Turn-on rise time	t _r			15		
Turn-off delay time	t _{d(off)}			30		
Turn-off fall time	t _f			15		
Turn-On Energy	E _{on}	V _{DS} = 720V, V _{GS} = -4V/18V, I _D = 20A, R _{g(ext)} = 2.5Ω, L = 200μH		190		μJ
Turn-Off Energy	E _{off}			70		
Source-Drain Diode characteristics						
Diode Forward Current	I _S	V _{GS} = -4V			46	A
Diode Forward voltage	V _{SD}	V _{GS} = -4V, I _{SD} = 10A		4.5		V
		V _{GS} = -4V, I _{SD} = 10A, T _J = 175°C		4.0		V
Reverse Recovery Time	t _{rr}	I _{SD} = 20A, V _R = 720V		20		nS
Reverse Recovery Charge	Q _{rr}			90		nC
Peak Reverse Recovery Current	I _{rrm}				9	

TO-247-4 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.800	5.200	0.189	0.205
A1	2.250	2.450	0.089	0.096
A2	1.850	2.150	0.073	0.085
b	1.050	1.350	0.041	0.053
b1	1.000	1.600	0.039	0.063
b2	2.350	2.950	0.093	0.116
c	0.500	0.700	0.020	0.028
D	22.340	22.740	0.880	0.895
D1	16.000	17.000	0.630	0.669
D2	0.970	1.370	0.038	0.054
e	2.340	2.740	0.092	0.108
e1	4.880	5.280	0.192	0.208
E	15.600	16.000	0.614	0.630
E1	13.500	14.500	0.531	0.571
E2	4.800	5.200	0.189	0.205
L	18.080	18.680	0.712	0.735
L1	2.380	2.780	0.094	0.109
P	3.500	3.700	0.138	0.146
p1	6.600	7.000	0.260	0.276
Q	6.000	6.300	0.236	0.248
S	6.000	6.300	0.236	0.248