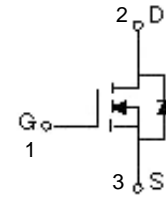
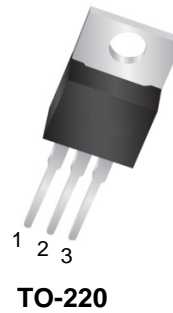


Main Product Characteristics

V_{DSS}	200V
$R_{DS(on)}$	0.18Ω (Max.)
I_D	18A



Schematic Diagram

Features and Benefits

- Ideal for PWM, load switching and general purpose applications
- Ultra low on-resistance with low gate charge
- Fast switching and reverse body recovery
- Lead free



Description

These N-Channel enhancement mode power field effect transistors are produced using advanced MOSFET technology to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are ideal for high efficiency switch mode power supplies.

Absolute Maximum Ratings

($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Units
I_D	Continuous Drain Current, $V_{GS} @ 10\text{ V}$	18	A
P_D	Power Dissipation	2	W
	Linear Derating Factor	1.0	W/°C
V_{GS}	Gate-Source Voltage	±20	V
E_{AS}	Single Pulse Avalanche Energy (note 1)	580	mJ
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	62.5	°C/W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	-55~+150	°C

Electrical Characteristics

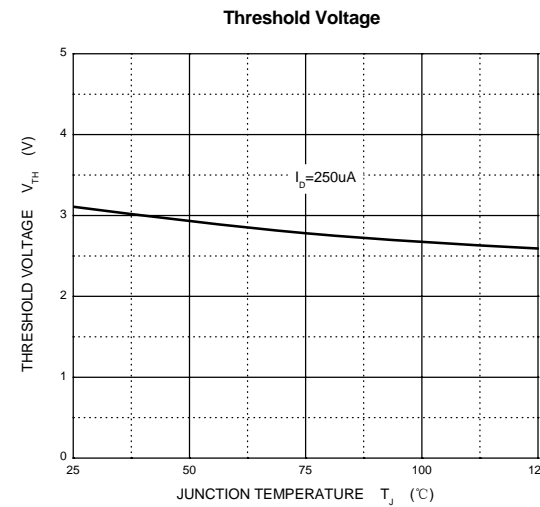
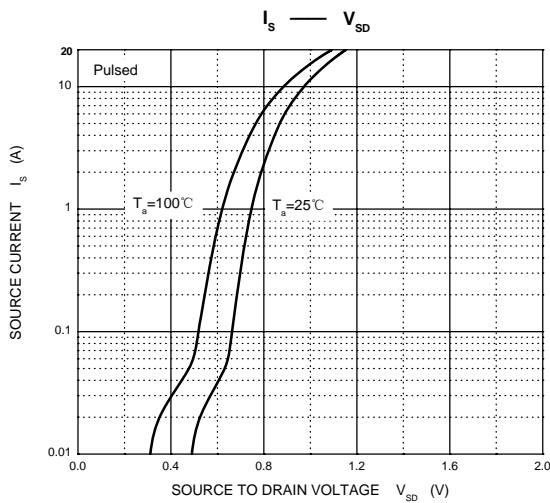
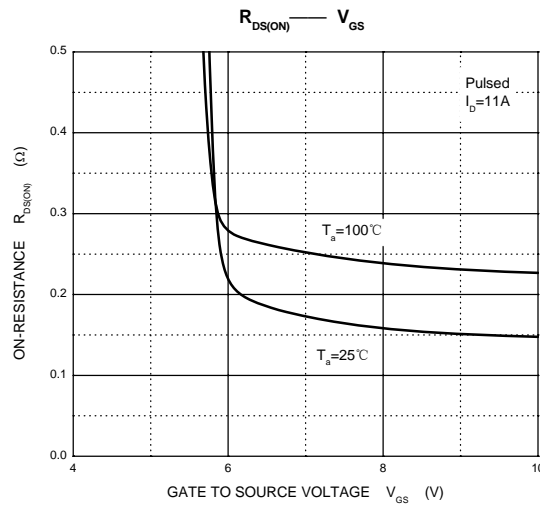
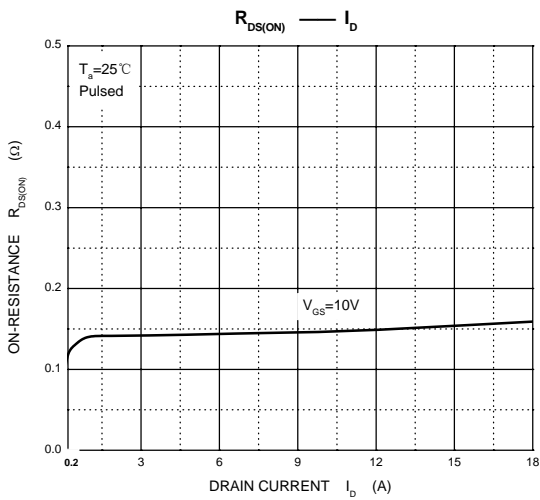
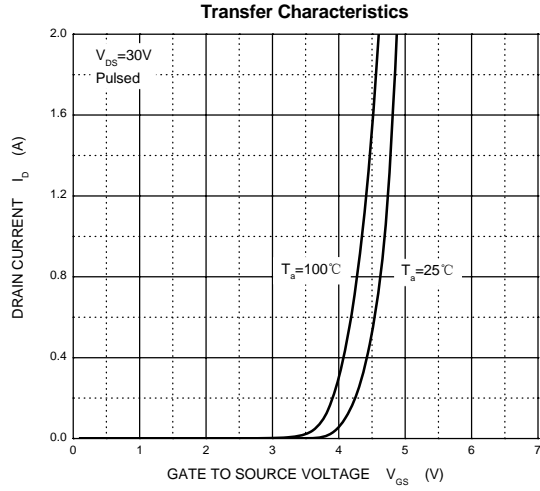
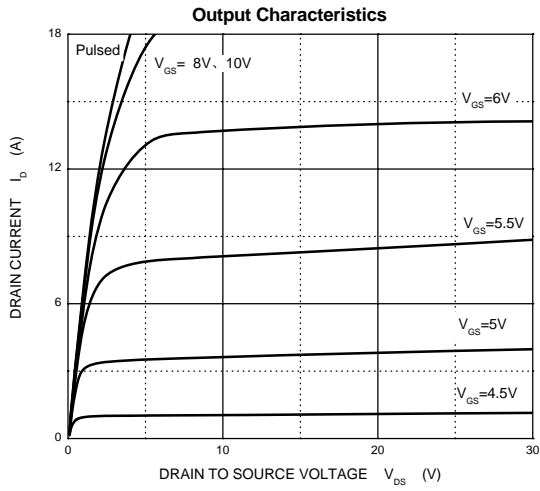
($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	200			V
Gate-threshold Voltage	$V_{(GS)th}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2		4	
Gate-body Leakage	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=200V, V_{GS}=0V$			25	μA
Drain-source On-resistance (note 2)	$R_{DS(on)}$	$V_{GS}=10V, I_D=11A$			0.18	Ω
Forward Transconductance (note 2)	g_{fs}	$V_{DS}=50V, I_D=11A$	6.7			S
Diode Forward Voltage (note 2)	V_{SD}	$I_S=18A, V_{GS}=0V$			2	V
Input Capacitance (note 3)	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		1300		pF
Output Capacitance (note 3)	C_{oss}			430		
Reverse Transfer Capacitance (note 3)	C_{rss}			130		
Turn-on Time(note 2,3)	$t_{d(on)}$	$V_{DD}=100V, R_D=5.4\Omega, I_D=18A, R_G=9.1\Omega$		14		ns
Rise Time	t_r			51		
Turn-off Time (note 2,3)	$t_{d(off)}$			45		
Fall Time (note 2,3)	t_f			36		

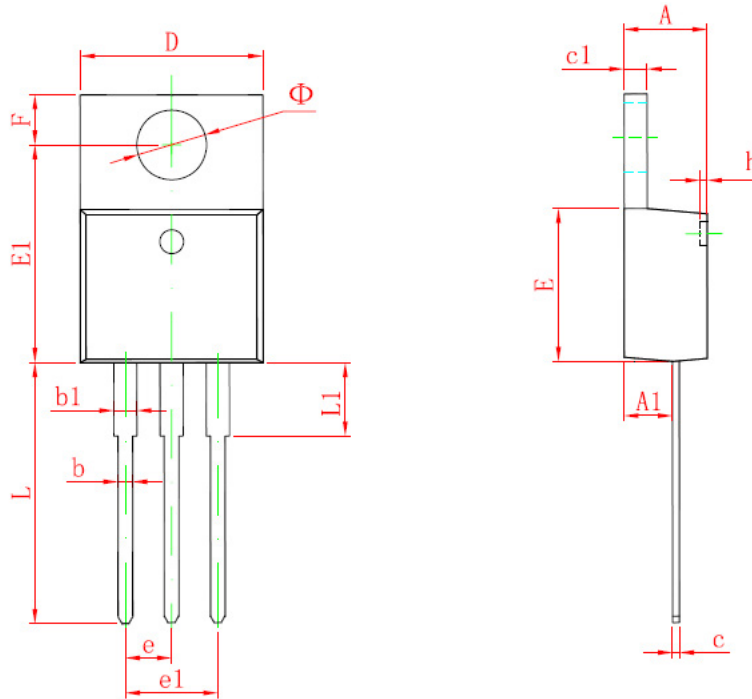
Notes:

- $V_{DD}=50V$, starting $T_J=25^\circ\text{C}$, $L=2.7mH, R_G=25\Omega, I_{AS}=18A$.
- Pulse test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- These parameters have no way to verify.

Typical Characteristic Curves



Product Outline Dimensions (TO-220)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
Φ	3.735	3.935	0.147	0.155