



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	6mΩ@10V	15A
	9mΩ@4.5V	

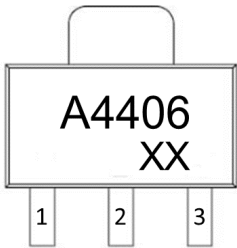
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance

Application

- Power Switching Application

MARKING:

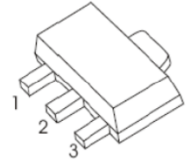


A4406= Device Code

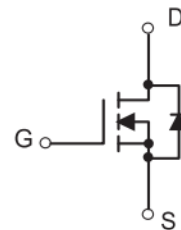
XX = Date Code

SOT-89-3L

- 1.GATE
- 2.DRAIN
- 3.SOURCE



Schematic diagram



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	30	V
Gate - Source Voltage	V_{GS}	±20	V
Continuous Drain Current ¹	I_D	15	A
Pulsed Drain Current ²	I_{DM}	60	A
Power Dissipation ⁵	P_D	3.5	W
Thermal Resistance from Junction to Ambient ⁶	$R_{\theta JA}$	35.7	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

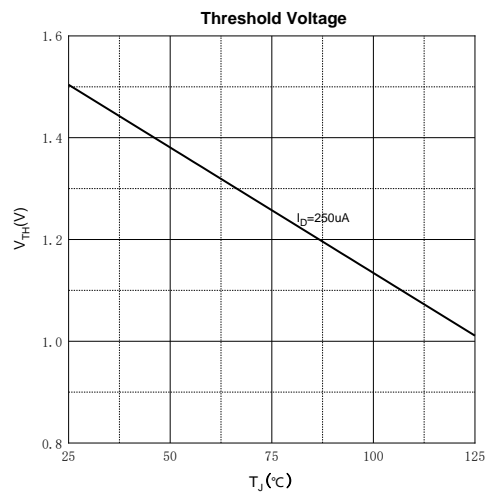
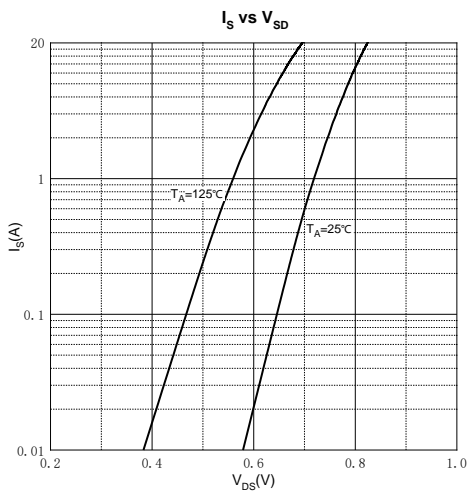
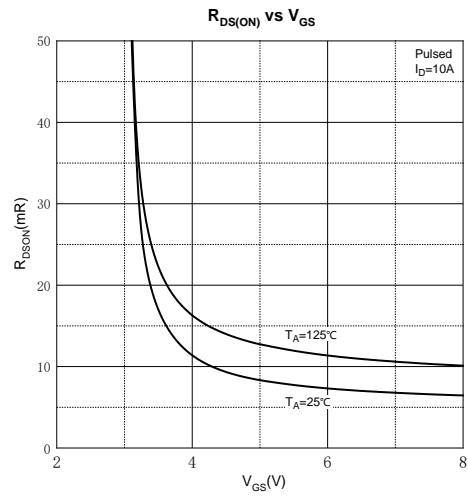
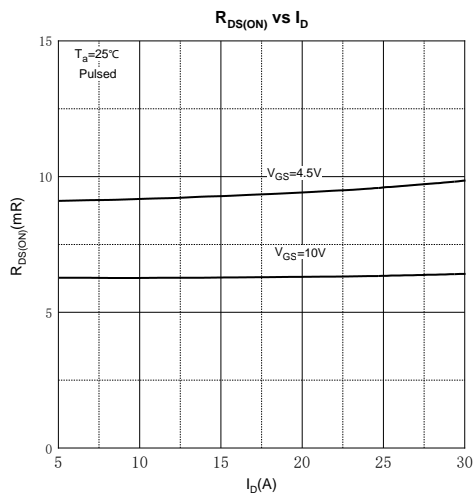
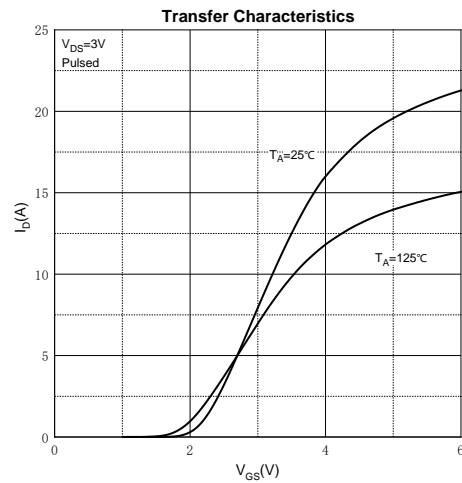
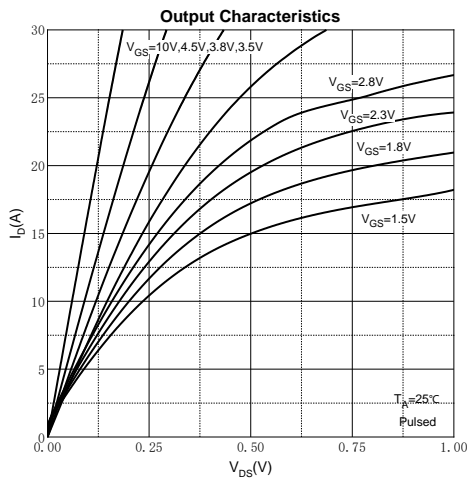
MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

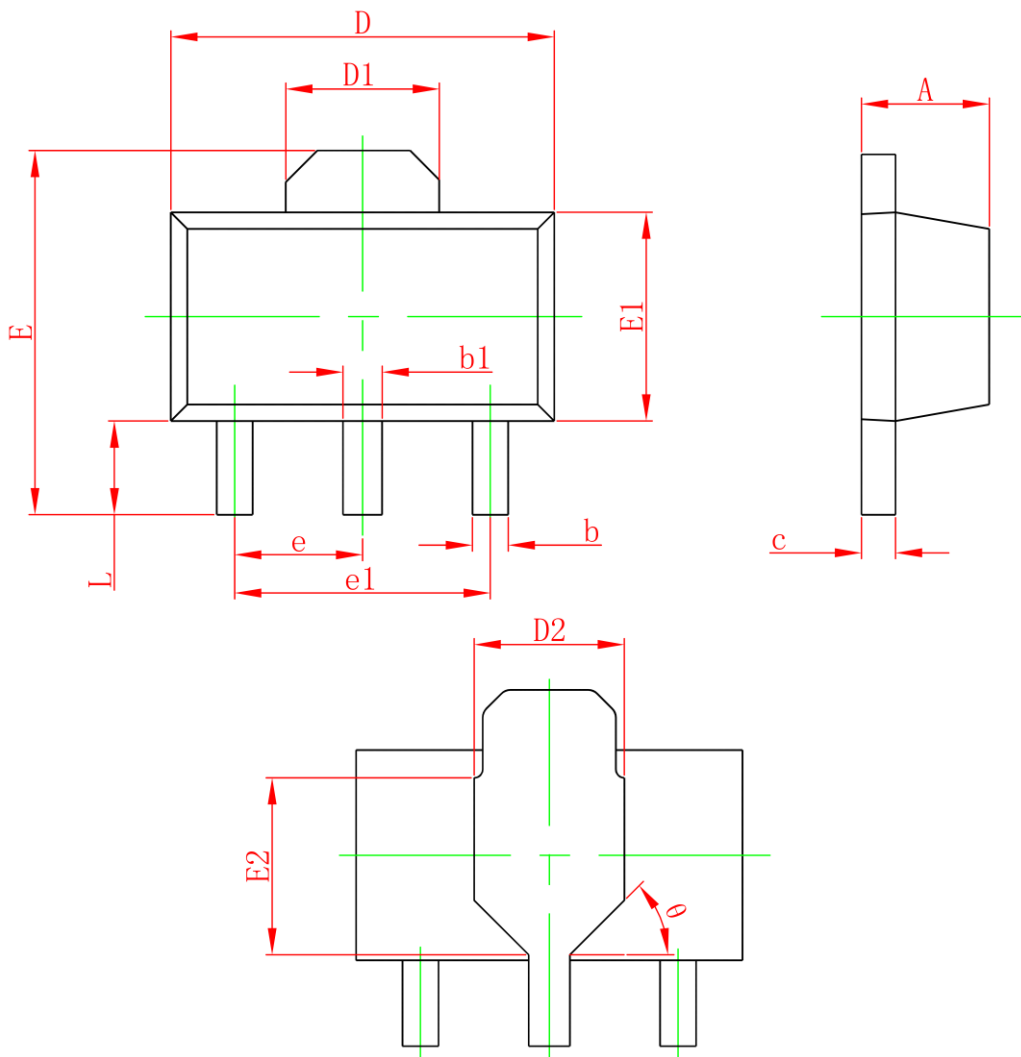
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics⁴						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0	1.5	3.0	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 12A		6	11	mΩ
		V _{GS} = 4.5V, I _D = 10A		9	15	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		990.2		pF
Output Capacitance	C _{oss}			143.7		
Reverse Transfer Capacitance	C _{rss}			128.2		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		1.95		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 15V, V _{GS} = 4.5V, I _D = 10A		22.2		nC
Gate-source Charge	Q _{gs}			3.0		
Gate-drain Charge	Q _{gd}			4.3		
Turn-on Delay Time	t _{d(on)}	V _{DD} = 15V, V _{GS} = 10V, R _L = 15Ω R _G = 6Ω		11		ns
Turn-on Rise Time	t _r			12		
Turn-off Delay Time	t _{d(off)}			36		
Turn-off Fall Time	t _f			10		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V _{SD}	V _{GS} = 0V, I _S = 10A			1.2	V

Notes :

- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.EAS condition: V_{DD} = 15V, V_{GS} = 10V, L = 0.5mH, R_G = 25Ω Starting T_J = 25°C.
- 4.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 5.The power dissipation P_D is limited by T_{J(MAX)} = 150°C.And device mounted on a large heatsink
- 6.Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A = 25°C.

Typical Characteristics



SOT-89-3L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.380	0.580	0.015	0.023
c	0.350	0.500	0.014	0.020
D	4.400	4.600	0.173	0.181
D1	1.650REF		0.065REF	
D2	1.650	1.850	0.065	0.073
E	3.900	4.400	0.154	0.173
E1	2.300	2.600	0.091	0.102
E2	1.900REF		0.075REF	
e	1.500TYP		0.059TYP	
e1	3.000TYP		0.118TYP	
L	0.900	1.200	0.035	0.047
θ	45°		45°	