

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	90mΩ@10V	3A
	100mΩ@4.5V	

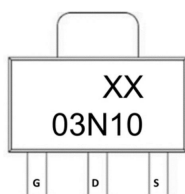
Feature

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

Application

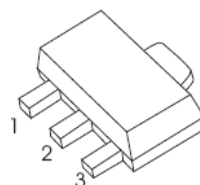
- Load Switch
- DC/DC Converter

MARKING:

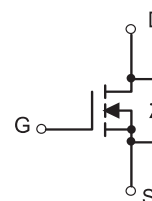


SOT-89-3L

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}	100	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current ^{1,5}	$T_A = 25^\circ\text{C}$	I_D	3	A
	$T_C = 25^\circ\text{C}$	I_D	6	
Pulsed Drain Current ²		I_{DM}	12	A
Power Dissipation ^{4,5}	$T_A = 25^\circ\text{C}$	P_D	1.5	W
	$T_C = 25^\circ\text{C}$	P_D	2.7	
Thermal Resistance from Junction to Ambient ⁵		$R_{\theta JA}$	80	$^\circ\text{C}/\text{W}$
Thermal Resistance from Junction to Case		$R_{\theta JC}$	45	
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

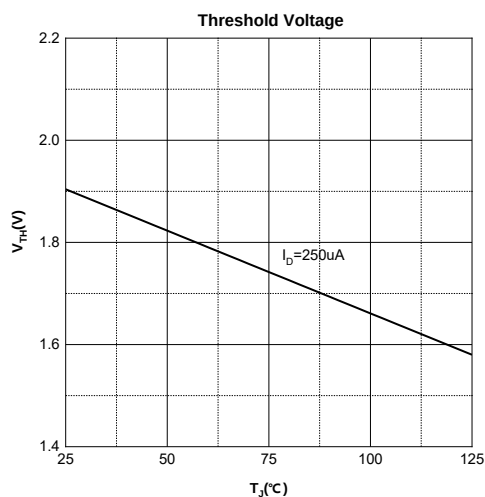
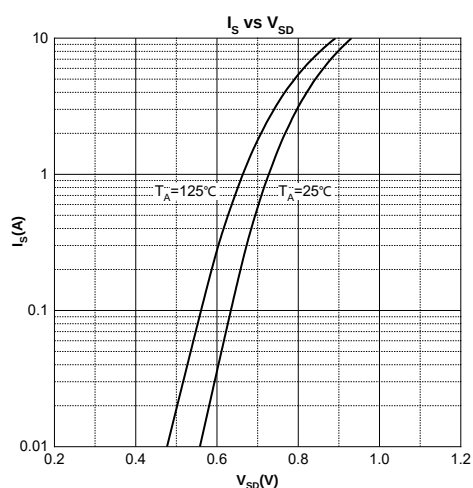
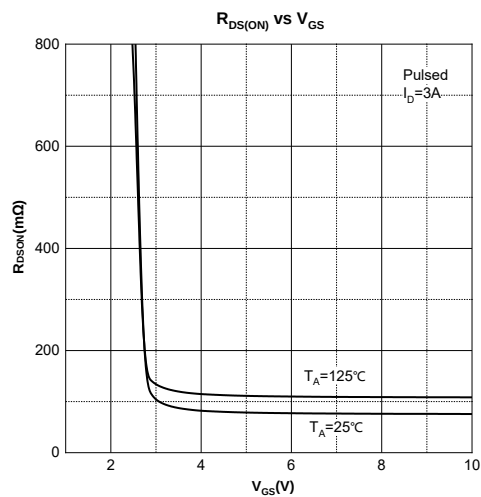
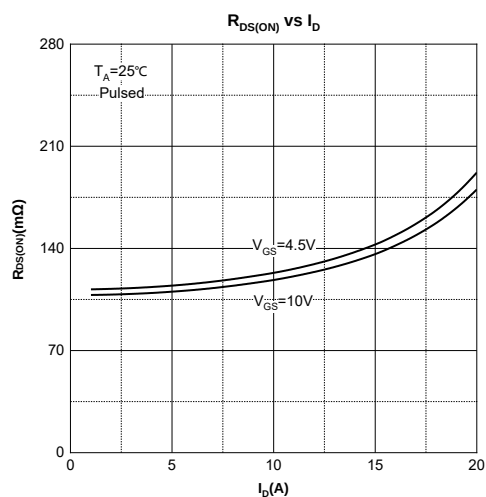
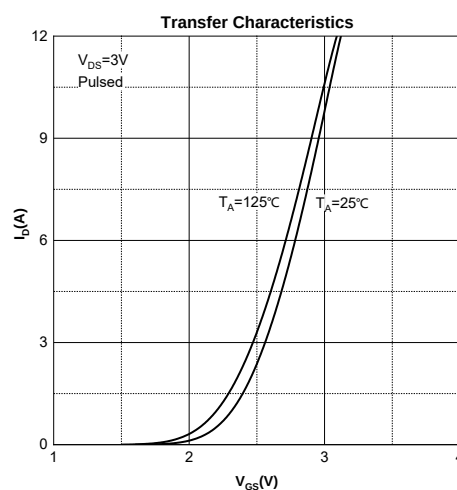
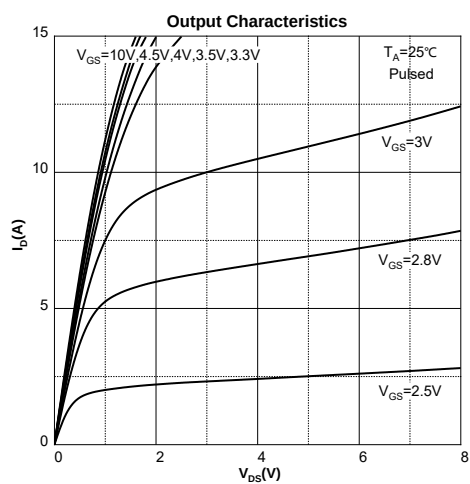
MOSFET ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

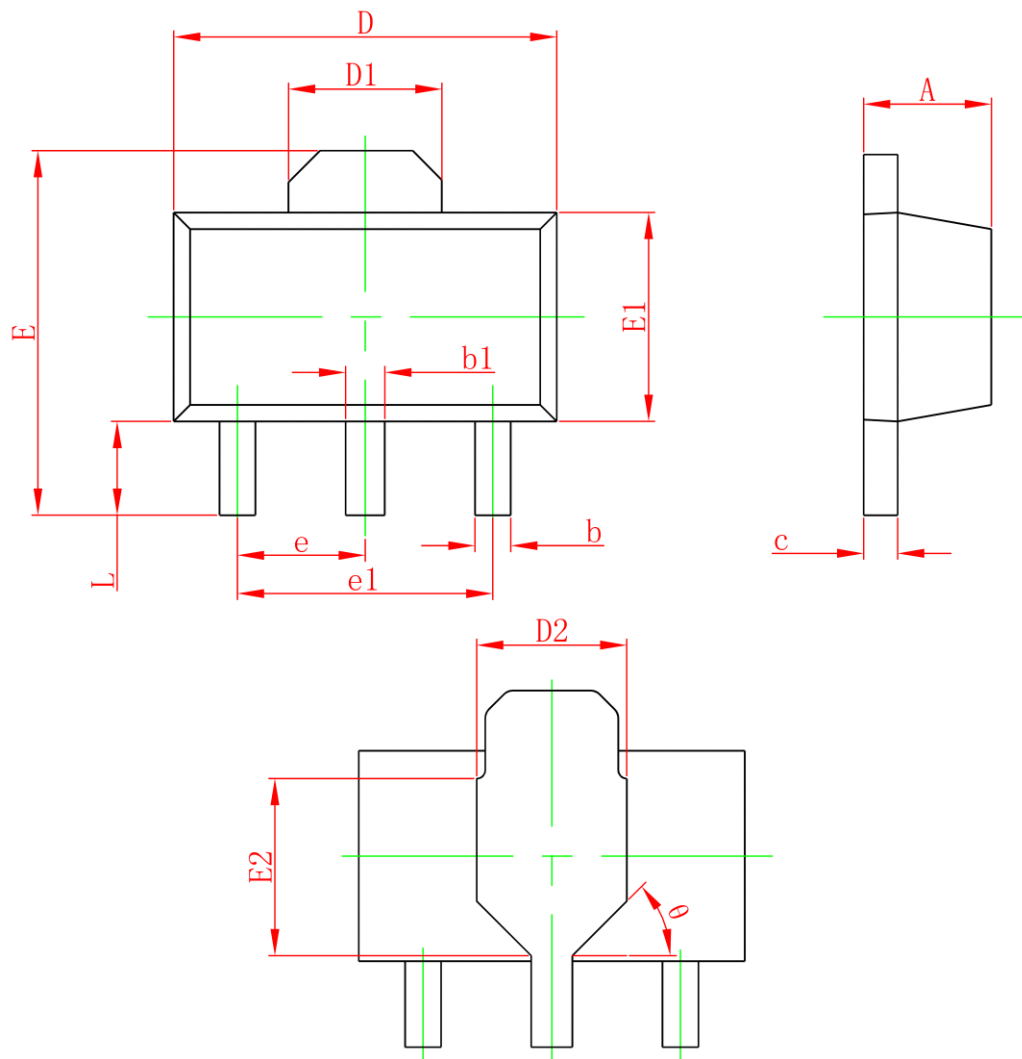
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V , I _D = 250μA	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics ³						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.9	3	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 3A		90	115	mΩ
		V _{GS} = 4.5V, I _D = 3A		100	130	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 50V, V _{GS} = 0V, f = 1MHz		1550		pF
Output Capacitance	C _{oss}			26		
Reverse Transfer Capacitance	C _{rss}			20		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		1.5		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 50V, V _{GS} = 10V, I _D = 3A		31		nC
Gate-source Charge	Q _{gs}			4.6		
Gate-drain Charge	Q _{gd}			6.9		
Turn-on Delay Time	t _{d(on)}	V _{DD} = 50V, V _{GS} = 10V, R _L = 17Ω, R _G = 3Ω		17		ns
Turn-on Rise Time	t _r			7		
Turn-off Delay Time	t _{d(off)}			35		
Turn-off Fall Time	t _f			6		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V _{SD}	V _{GS} = 0V, I _S = 3A			1.2	V

Notes :

- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

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°	

Attention:

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
- Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.
- GreenPower Electronics products belong to consumer electronics or other civilian electronic products.