

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	35mΩ@-10V	-5A
	55mΩ@-4.5V	

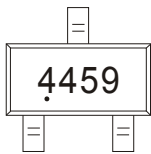
Feature

- Trench Power MOSFET
- Excellent $R_{DS(ON)}$

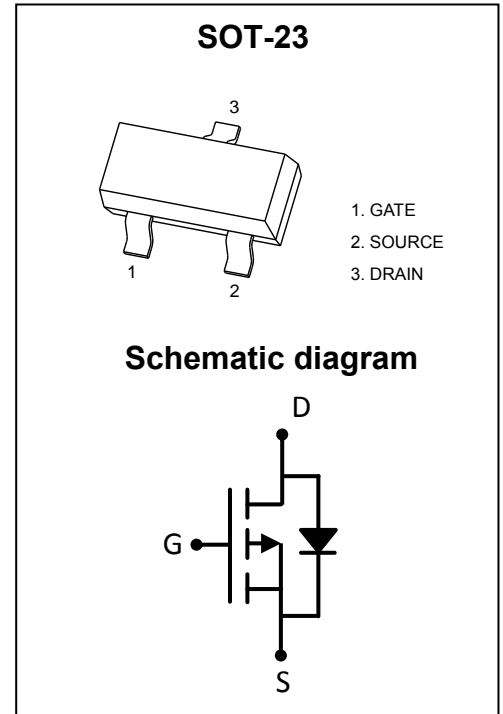
Application

- Load Switch
- Battery Protection Applications

MARKING:



4459 = Device Cpde
 Solid Dot = Green Molding Compound Device,
 Otherwise Normal Device



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	I_D	$T_A = 25^\circ\text{C}$	-5.0
		$T_A = 100^\circ\text{C}$	-3.2
Pulsed Drain Current ¹	I_{DM}	-20	A
Power Dissipation ^{4,5}	P_D	0.35	W
Thermal Resistance from Junction to Ambient ²	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~ +150	$^\circ\text{C}$

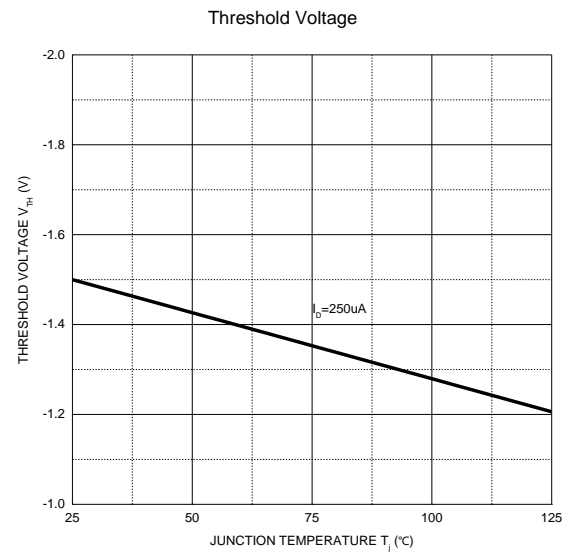
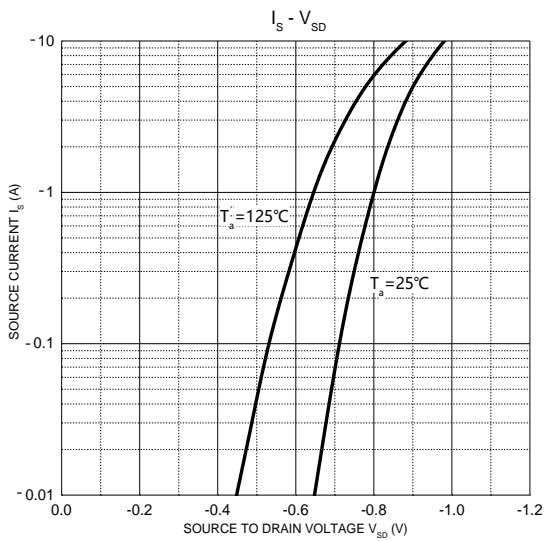
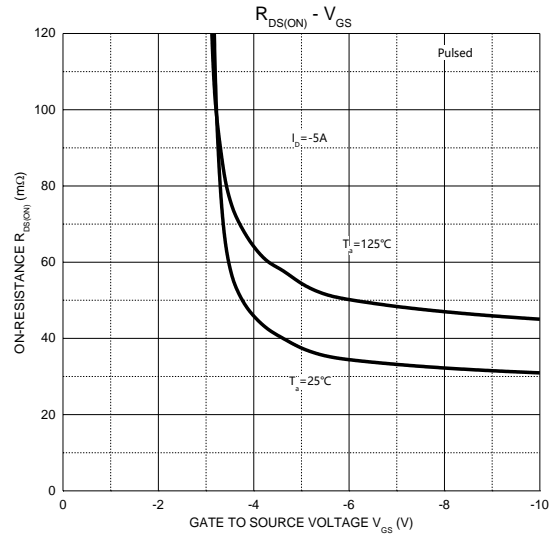
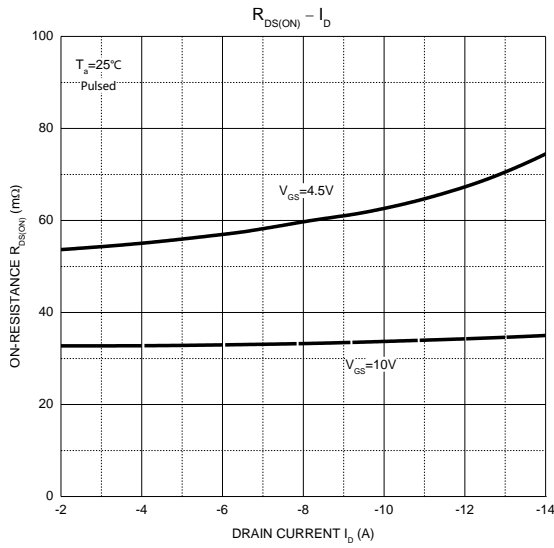
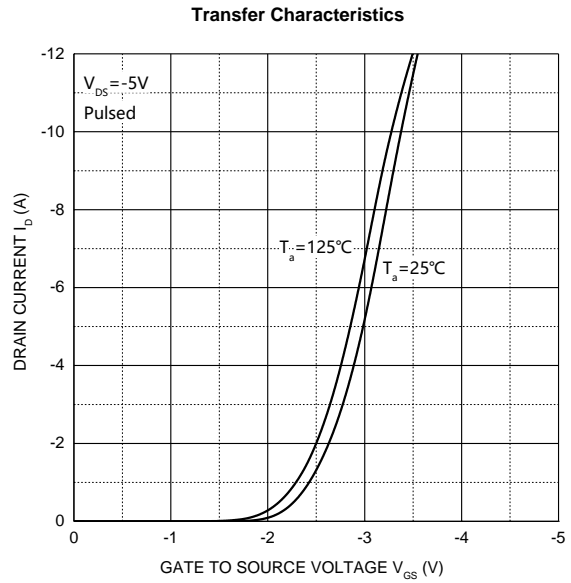
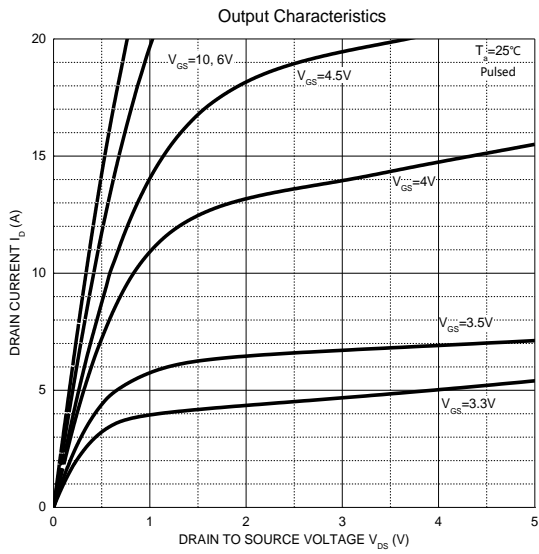
MOSFET ELECTRICAL CHARACTERISTICS(T_A=25°C unless otherwise noted)

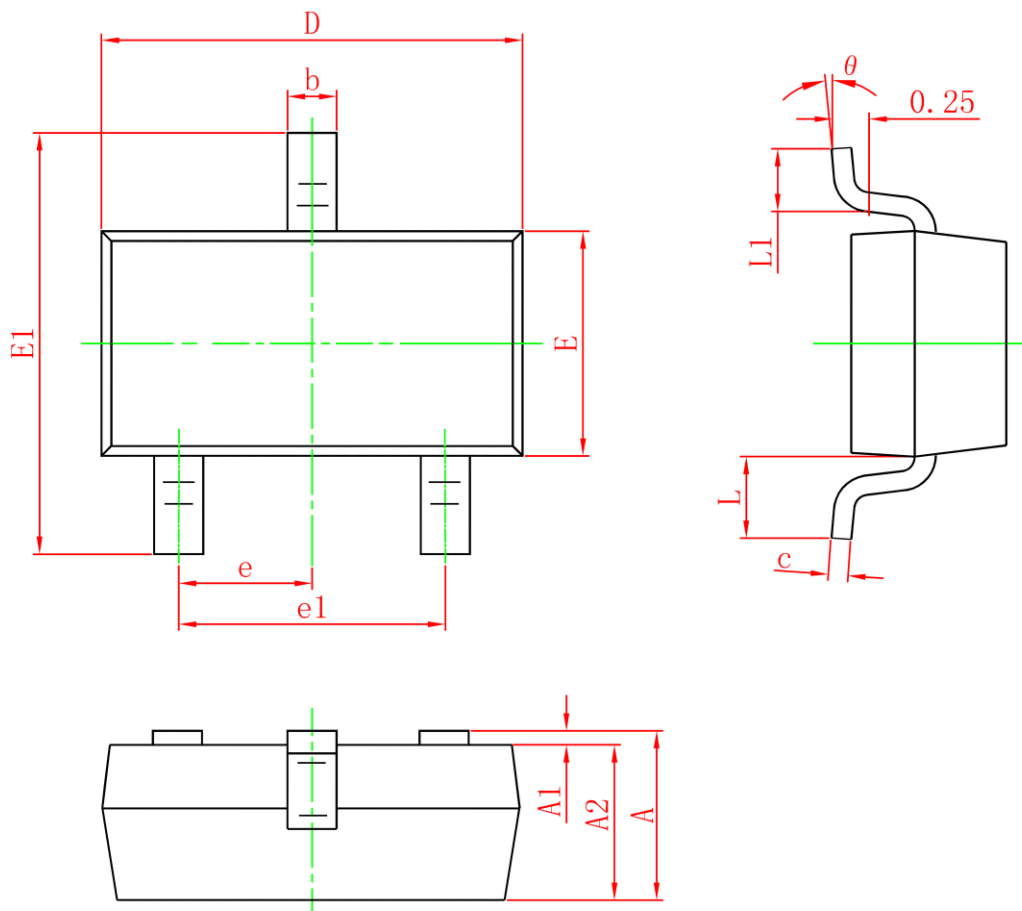
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V			-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Gate Threshold Voltage ¹	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.0	-1.5	-2.5	V
Drain-Source On-Resistance ¹	R _{DS(on)}	V _{GS} = -10V, I _D = -5A		35	46	mΩ
		V _{GS} = -4.5V, I _D = -5A		55	72	
Forward Transconductance ¹	g _{FS}	V _{DS} = -5V, I _D = -5A	10			S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		850		pF
Output Capacitance	C _{oss}			100		
Reverse Transfer Capacitance	C _{rss}			70		
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{GS} = -10V, V _{DS} = -15V, R _L = 2.5Ω, R _{GEN} = 3Ω		9		ns
Turn-On Rise Time	t _r			7		
Turn-Off Delay Time	t _{d(off)}			25		
Turn-Off Fall Time	t _f			10		
Total Gate Charge	Q _g	V _{DS} = -15V, V _{GS} = -10V, I _D = -5A		12		nC
Gate-Source Charge	Q _{gs}			2.5		
Gate-Drain Charge	Q _{gd}			4		
Source-Drain Diode characteristics						
Diode Forward Voltage ¹	V _{DS}	V _{GS} = 0V, I _S = -1A			-1.2	V

Notes:

1 Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 2%.

Typical Electrical and Thermal Characteristics



SOT-23 Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.300	0.035	0.051
A1	0	0.100	0	0.004
A2	0.900	1.200	0.035	0.047
b	0.300	0.550	0.012	0.022
c	0.080	0.158	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.150	1.500	0.045	0.059
E1	2.200	2.700	0.087	0.106
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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.