

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	20mΩ@-10V	-50A

Feature

- High density cell design for ultra low $R_{DS(ON)}$
- Excellent package for good heat dissipation

Application

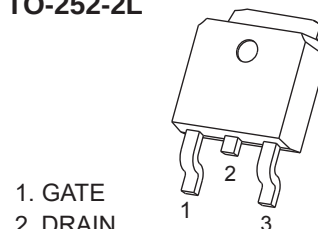
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING:



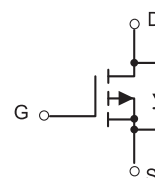
50P06L= Device Code
 XX = Date Code
 Solid Dot = Green Indicator

TO-252-2L



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}	-60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current ¹	$T_C = 25^{\circ}\text{C}$	I_D	-50	A
Continuous Drain Current ¹	$T_C = 100^{\circ}\text{C}$	I_D	-32	A
Pulsed Drain Current ¹		I_{DM}	-200	A
Single Pulsed Avalanche Current ³		I_{AS}	-25	A
Single Pulsed Avalanche Energy ³		E_{AS}	156	mJ
Power Dissipation ²		P_D	125	W
Thermal Resistance from Junction to Case		$R_{\theta JC}$	1	$^{\circ}\text{C}/\text{W}$
Junction Temperature		T_J	150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^{\circ}\text{C}$

Notes :

- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.The power dissipation P_D is limited by $T_{J(MAX)} = 150^{\circ}\text{C}$.And device mounted on a large heatsink
3. E_{AS} condition: $V_{DD} = -25\text{V}$, $V_{GS} = -10\text{V}$, $L = 0.5\text{mH}$, $R_G = 25\Omega$ Starting $T_J = 25^{\circ}\text{C}$.

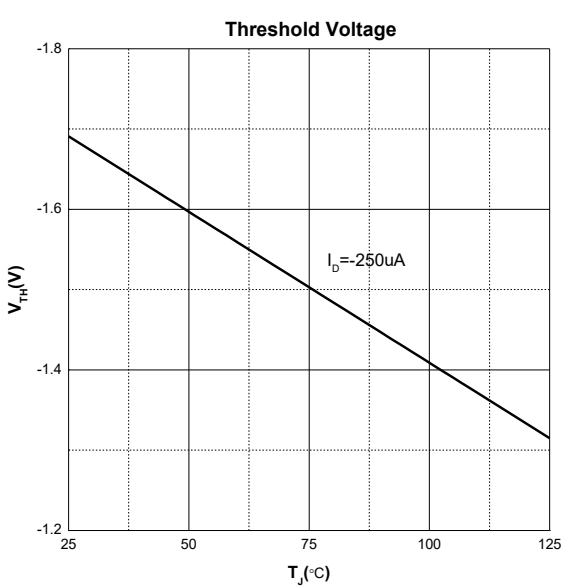
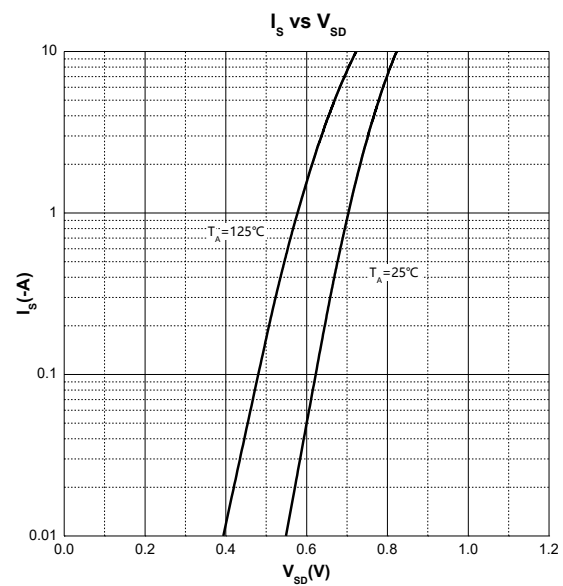
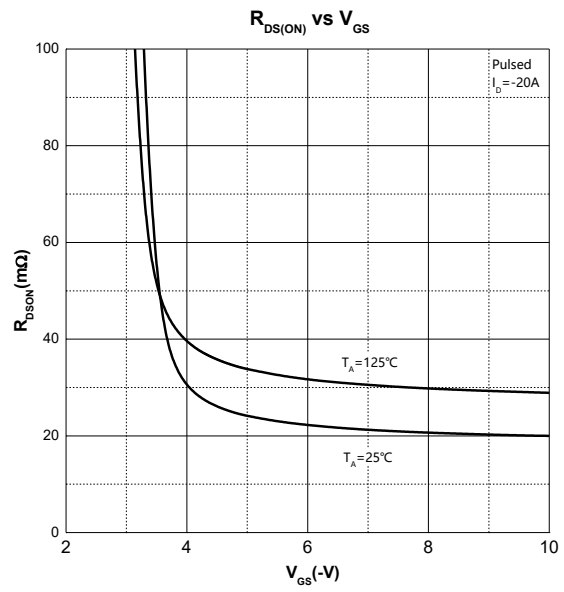
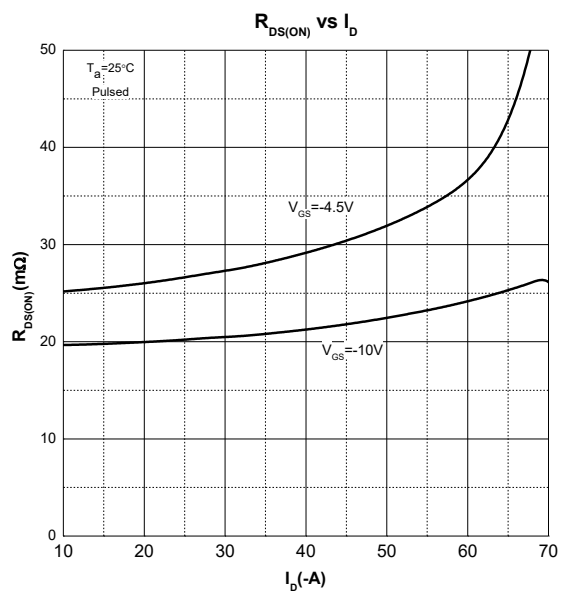
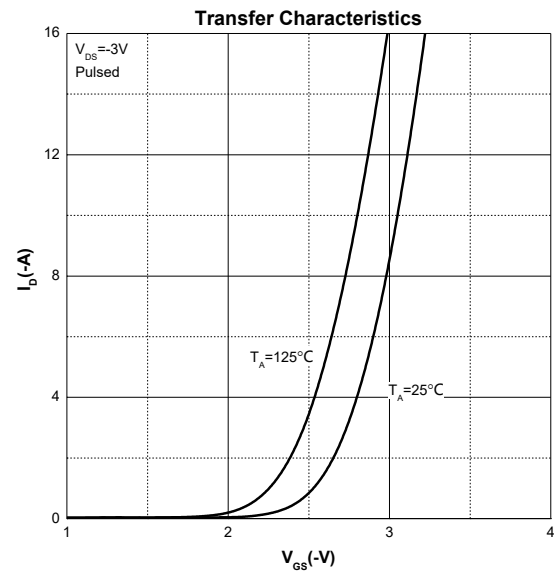
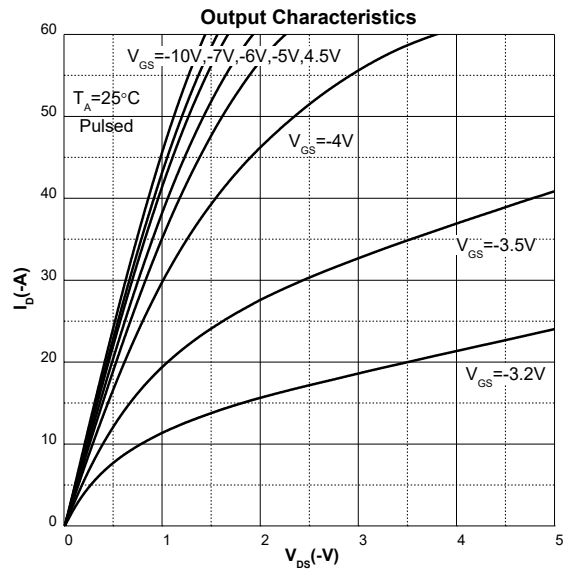
MOSFET ELECTRICAL CHARACTERISTICS(T_A=25°C unless otherwise noted)

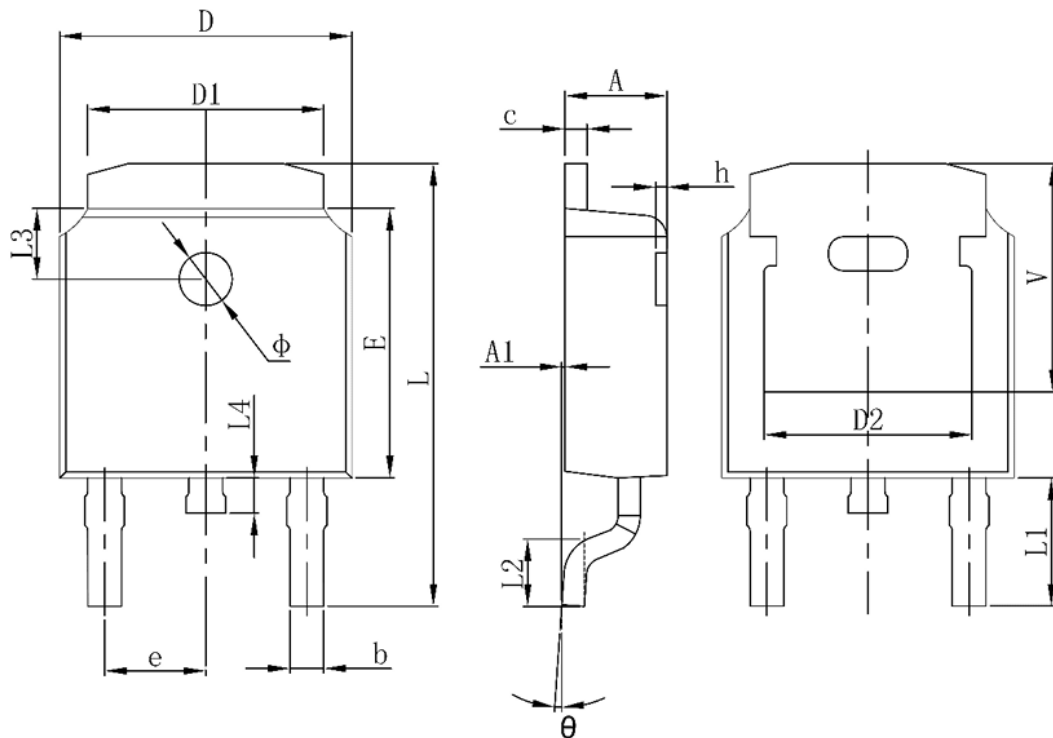
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -60V, V _{GS} = 0V			-1	μA
Gate-body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics						
Gate Threshold Voltage*	V _{GS(th)}	V _{DS} =V _{GS} , I _D = -250μA	-1.2	-1.7	-2.5	V
Drain-source On-resistance*	R _{DS(on)}	V _{GS} = -10V, I _D = -15A		20	29	mΩ
Forward Transconductance*	g _{FS}	V _{DS} = -10V, I _D = -10A	15			S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -30V, V _{GS} = 0V, f = 1MHz		2775		pF
Output Capacitance	C _{oss}			169		
Reverse Transfer Capacitance	C _{rss}			142		
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = -30V, V _{GS} = -10V, I _D = -3A		54		nC
Gate-Source Charge	Q _{gs}			6.9		
Gate-Drain Charge	Q _{gd}			11.3		
Turn-on Delay Time	t _{d(on)}	V _{DD} = -30V, R _G = 1.5Ω, V _{GS} = -10V, R _G = 3Ω,		7		ns
Turn-on Rise Time	t _r			3		
Turn-off Delay Time	t _{d(off)}			32		
Turn-off Fall Time	t _f			6		
Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} = 0V , I _S = -15A			-1.2	V
Diode Forward Current	I _S				-50	A

Note :

*: Pulse test : Pulse width ≤ 380μs, duty cycle ≤ 2%.

Typical Characteristics



TO-252-2L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.130	0.000	0.005
b	0.590	0.860	0.023	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830REF		0.190REF	
E	6.000	6.300	0.236	0.248
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900REF		0.114REF	
L2	1.400	1.700	0.055	0.067
L3	1.600REF		0.063REF	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250REF		0.207REF	

Attention:

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
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