



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	24mΩ@-10V	-50A

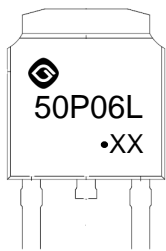
Feature

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

Application

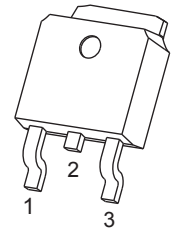
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible Power Supply

MARKING:



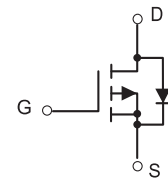
50P06L= Device Code
XX = Date Code
Solid Dot = Green Indicator

TO-252-2L



1. GATE
2. DRAIN
3. SOURCE

Schematic diagram



ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}C$ 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	I_D	-50	A
Continuous Drain Current ¹	I_D	-34.5	$^{\circ}C$
Pulsed Drain Current ¹	I_{DM}	-200	A
Single Pulsed Avalanche Current ³	I_{AS}	-39.5	A
Single Pulsed Avalanche Energy ³	E_{AS}	390	mJ
Power Dissipation ²	P_D	125	W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	1	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

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 $T_{J(MAX)} = 150^{\circ}C$.And device mounted on a large heatsink
3. E_{AS} condition: $V_{DD} = -25V, V_{GS} = -10V, L = 0.5mH, R_G = 25\Omega$ Starting $T_J = 25^{\circ}C$.

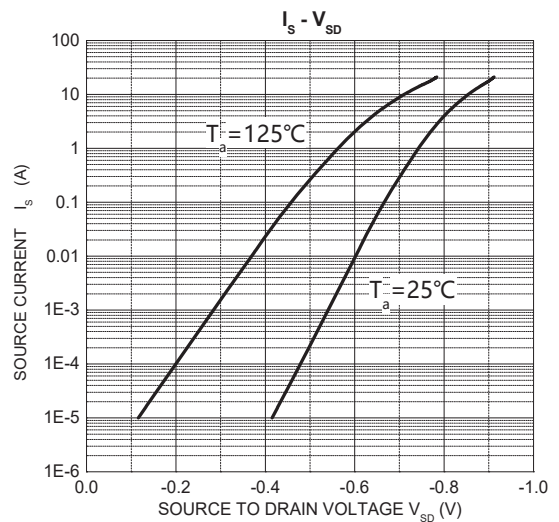
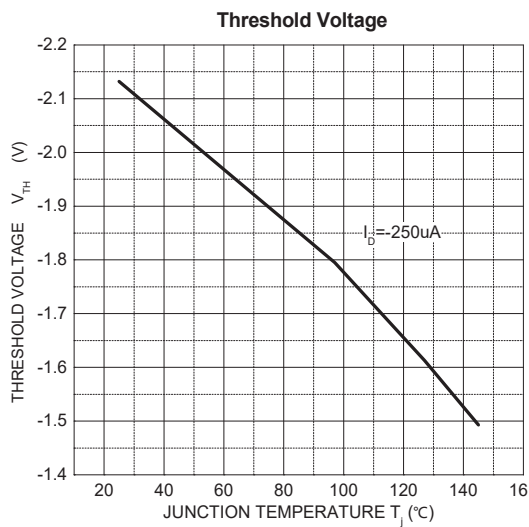
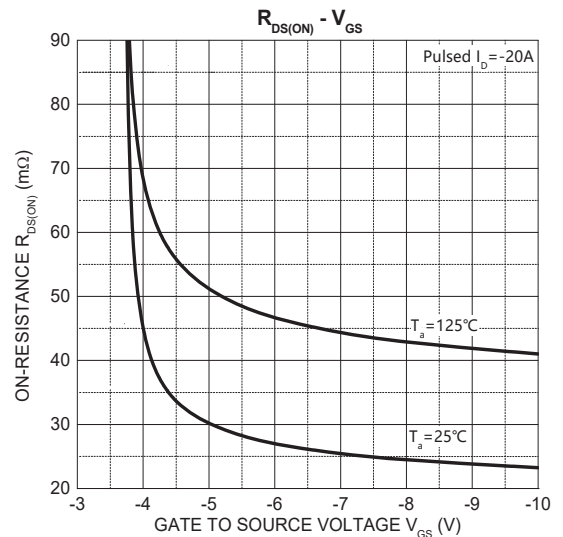
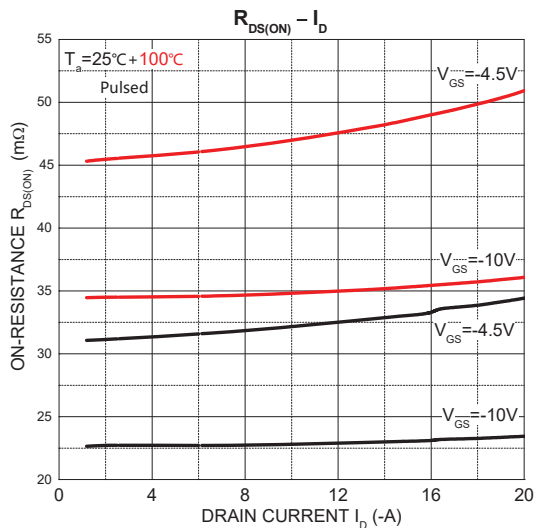
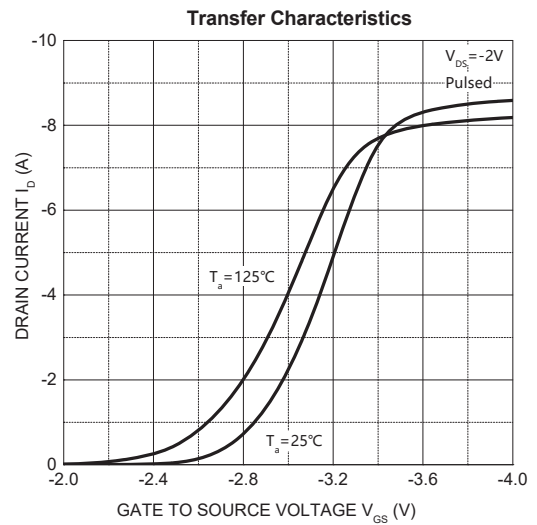
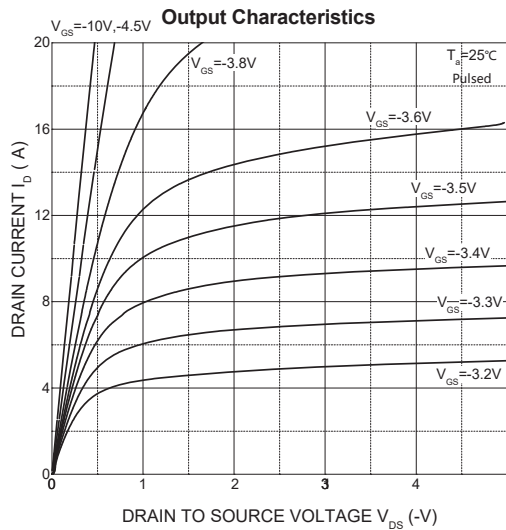
MOSFET ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)

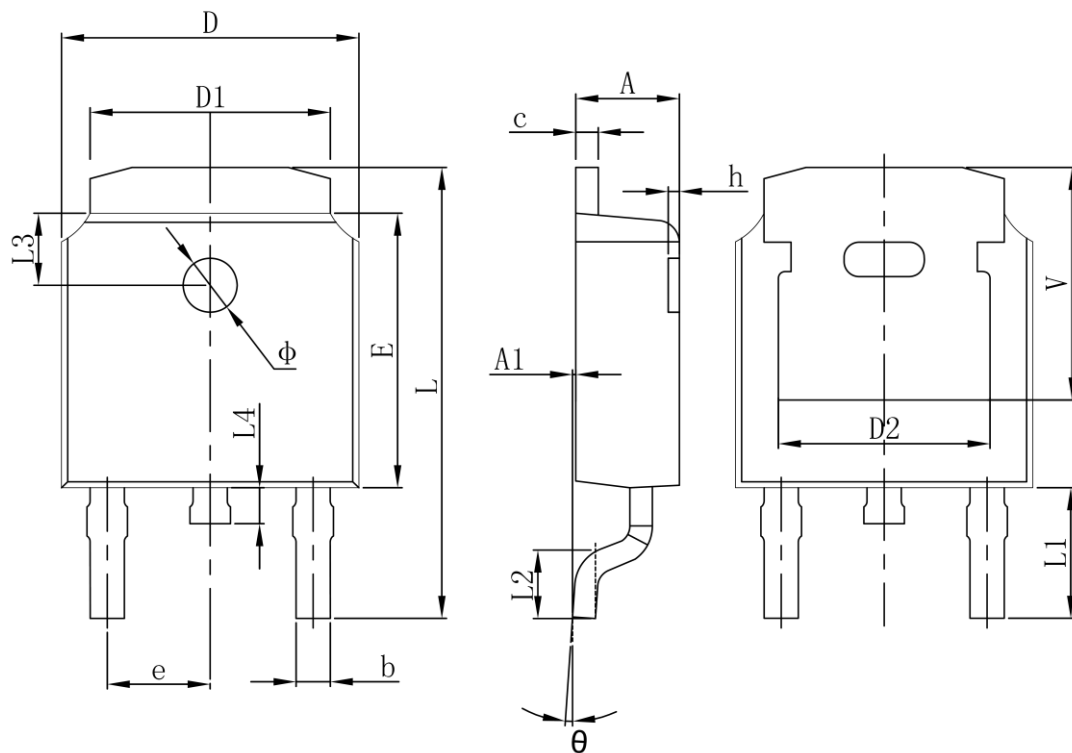
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -48V, V_{GS} = 0V$			-1	μA
Gate-body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics						
Gate Threshold Voltage*	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-2	-3	V
Drain-source On-resistance*	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -15A$		24	29	m Ω
Forward Transconductance*	g_{FS}	$V_{DS} = -10V, I_D = -10A$	15			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -30V, V_{GS} = 0V, f = 1MHz$		3129		pF
Output Capacitance	C_{oss}			173		
Reverse Transfer Capacitance	C_{rss}			162.6		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -30V, V_{GS} = -10V, I_D = -15A$		53		nC
Gate-Source Charge	Q_{gs}			15		
Gate-Drain Charge	Q_{gd}			13		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -30V, R_G = 1.5\Omega,$ $V_{GS} = -10V, R_G = 3\Omega,$		13		ns
Turn-on Rise Time	t_r			17		
Turn-off Delay Time	$t_{d(off)}$			50		
Turn-off Fall Time	t_f			20		
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 $\leq 380\mu s$, duty cycle $\leq 2\%$.

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	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
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	6.200	0.236	0.244
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	