

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-60V	25mΩ@-10V	-40A
	30mΩ@-4.5V	

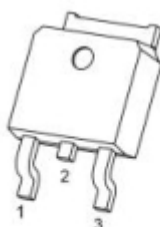
## Feature

- High switching speed
- Low Gate Charge
- Excellent package for good heat dissipation

## Application

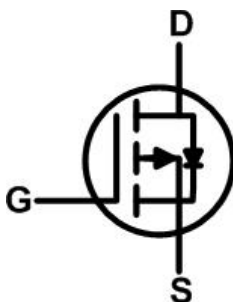
- Load Switches, Adaptor Switch
- Uninterruptible Power Supply

## Package

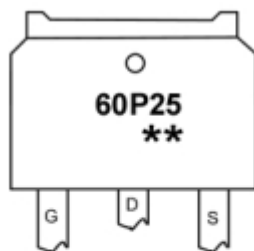


TO-252-2L(G:1 D:2 S:3)

## Circuit diagram



## Marking



**60P25**    =Device Code  
**\*\***        =Week Code

## Absolute maximum ratings

(T<sub>a</sub>=25°C unless otherwise noted)

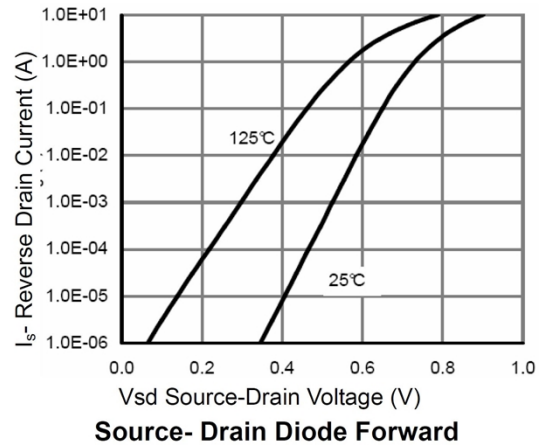
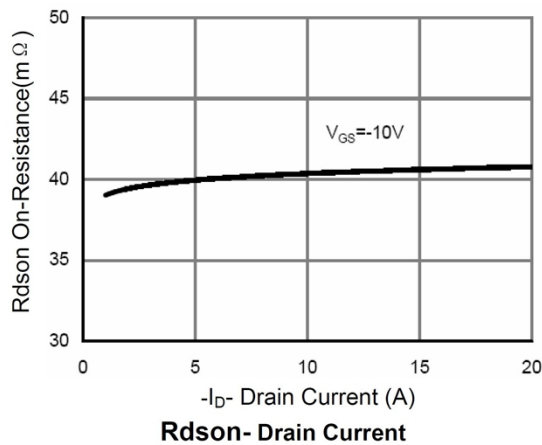
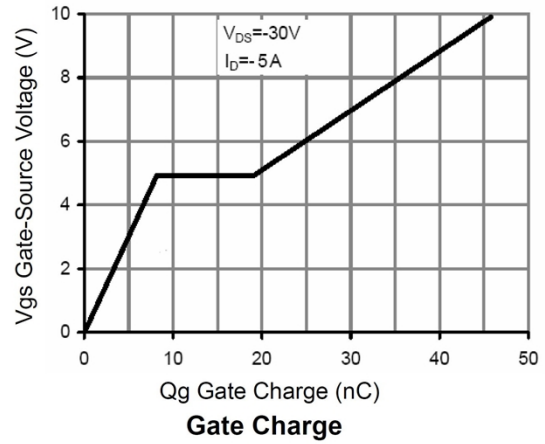
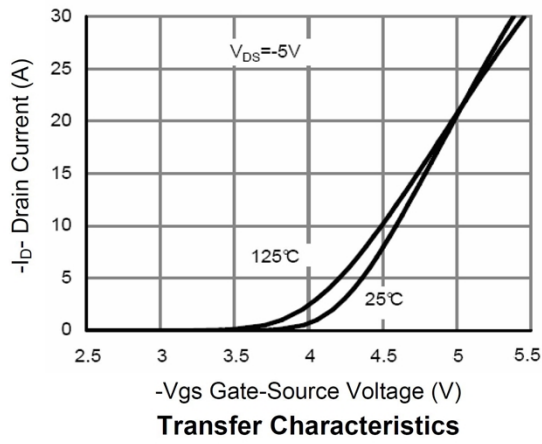
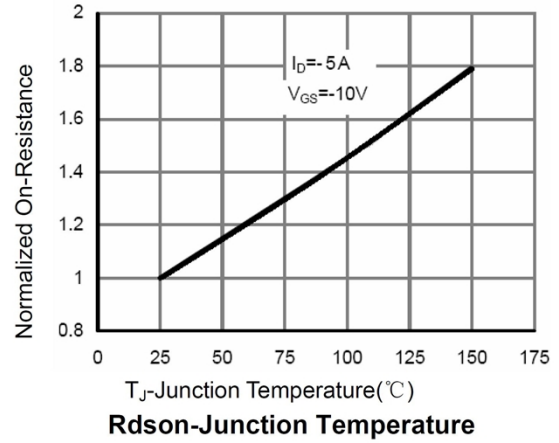
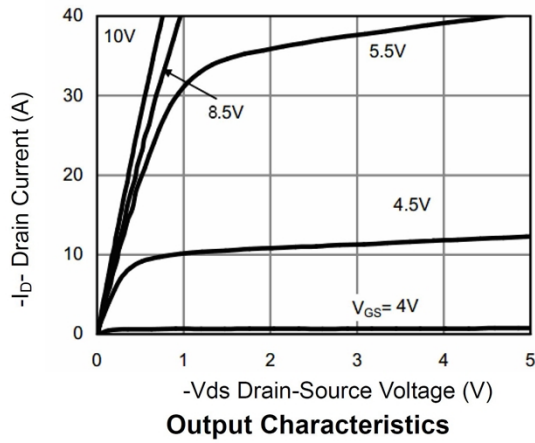
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	-60	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Drain Current-Continuous (T <sub>c</sub> =25°C)	I <sub>D</sub>	-40	A
Pulse Drain Current Tested	I <sub>DM</sub>	-160	A
Maximum Power Dissipation(T <sub>c</sub> =25°C)	P <sub>D</sub>	86	W
Thermal Resistance-Junction to Case	R <sub>θJC</sub>	1.45	°C/W
Operating Junction and Storage Temperature Range	T <sub>STG</sub> , T <sub>J</sub>	-55 to 150	°C

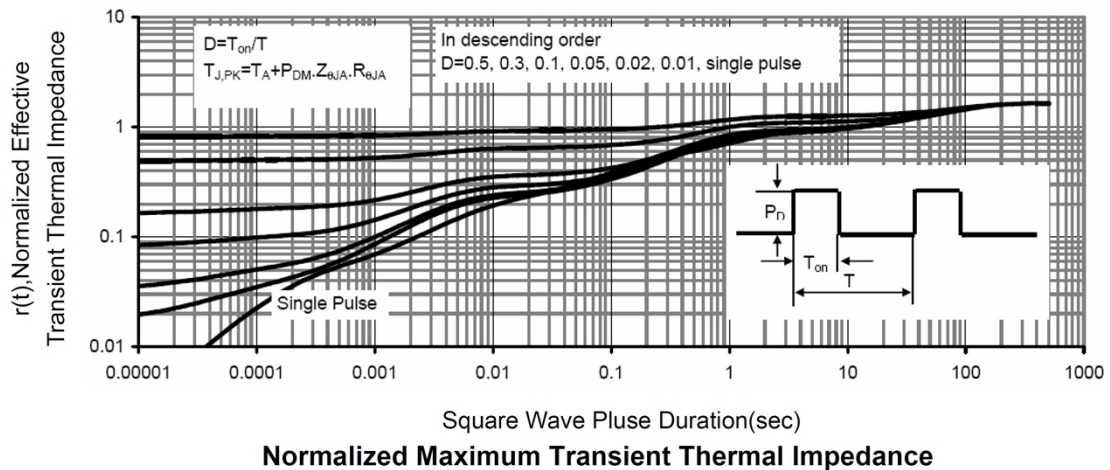
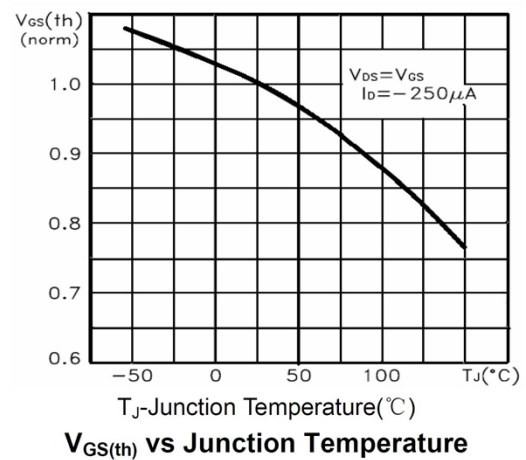
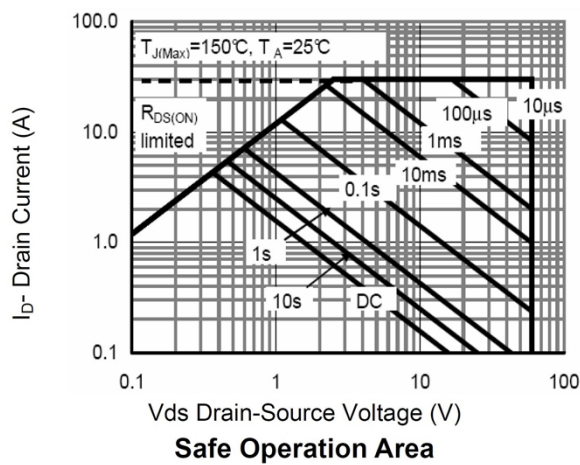
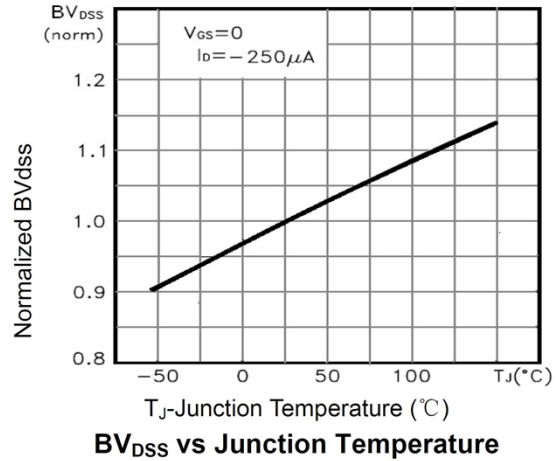
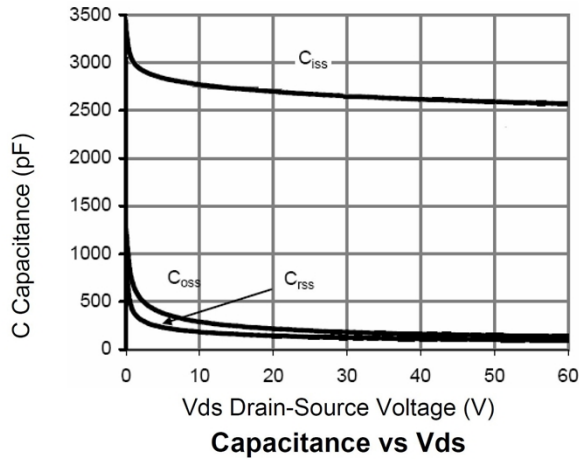
## Electrical characteristics

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

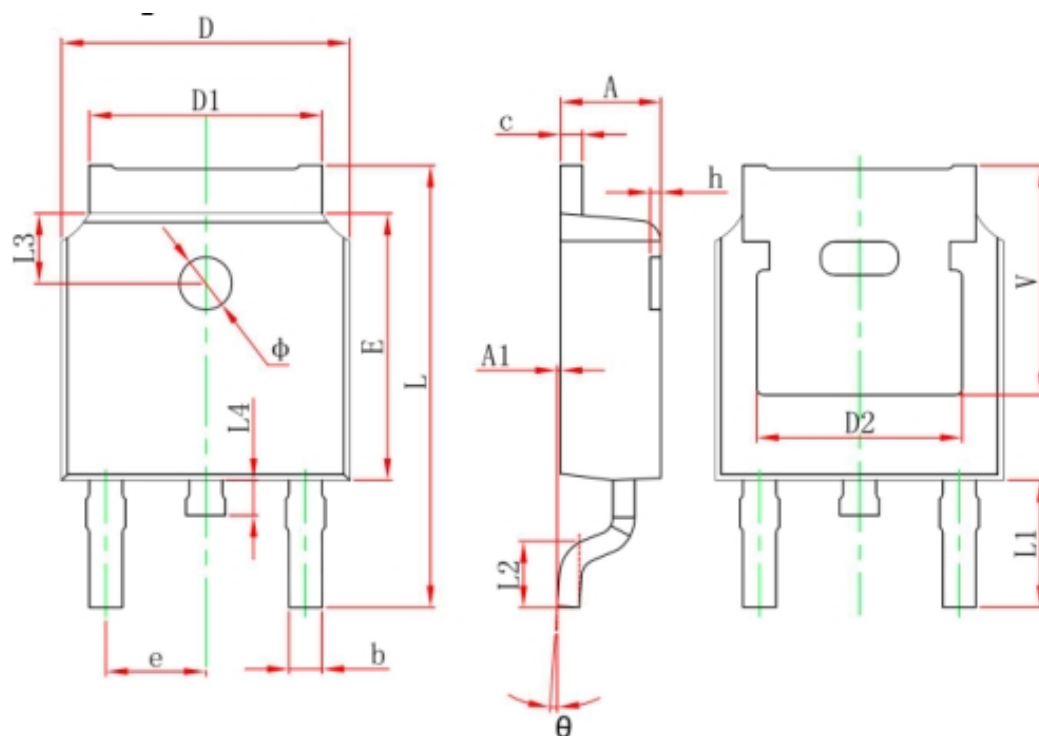
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR)DSS	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-60			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -60V, V <sub>GS</sub> = 0V			-1	uA
Gate-Source Leakage	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	uA
Gate-Source Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-1	-1.7	-2.5	V
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -20A		25	35	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -15A		30	42	
Dynamic Characteristics						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -30V, V <sub>GS</sub> =0V, f=1MHz		2588		pF
Output Capacitance	C <sub>oss</sub>			110		
Reverse Transfer Capacitance	C <sub>rss</sub>			106		
Switching Characteristics						
Turn-on Delay Time	T <sub>d(on)</sub>	V <sub>DD</sub> = -30V, I <sub>D</sub> = -20A, V <sub>GEN</sub> = -10V, R <sub>GEN</sub> =3Ω		11		nS
Turn-on Rise Time	T <sub>r</sub>			5		
Turn-off Delay Time	T <sub>d(off)</sub>			43		
Turn-off Fall Time	T <sub>f</sub>			14		
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -30V, V <sub>GS</sub> = -10V, I <sub>D</sub> = -20A		46		nC
Gate-Source Charge	Q <sub>gs</sub>			9		
Gate-Drain Charge	Q <sub>gd</sub>			10		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V <sub>SD</sub>	I <sub>SD</sub> = -1A,V <sub>GS</sub> =0V			-1.2	V

## Typical Characteristics





## TO-252 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	0.660	0.860	0.026	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	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
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	5.350 REF.		0.211 REF.	