Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	5.5mΩ@10V	18A
	8.5mΩ@4.5V	

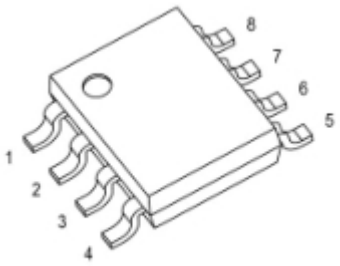
Feature

- Fast Switching
- Low Gate Charge and Rdson
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

Applications

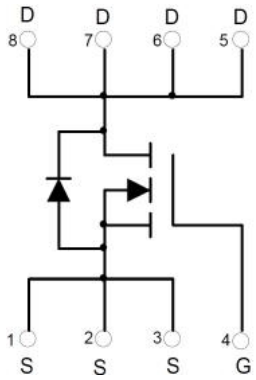
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

Package

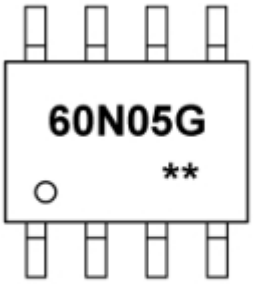


SOP-8L

Circuit diagram



Marking



60N05G : Product code
**** : Week code.**

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain source voltage	V_{DS}	60	V
Gate source voltage	V_{GS}	±20	V
Continuous drain current	I_D	18	A
Pulsed Drain Current	I_{DM}	72	A
Maximum Power Dissipation	P_D	1.5	W
Thermal resistance, junction-case	$R_{\theta JC}$	80	℃/ W
Thermal resistance, junction-ambient[4)]	$R_{\theta JA}$	24	℃/ W
Operation and storage temperature	T_{STG}, T_J	-55~ +150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	60			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.7	2.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =8A		5.5	6.9	mΩ
		V_{GS} =4.5V, I_D =6A		8.5	11.5	
Gate-source leakage current	I_{GSS}	V_{GS} =±20V			±100	uA
Drain-source leakage current	I_{DSS}	V_{DS} =60V,V_{GS} = 0V			1	uA
Gate Resistance	R_g	f=1MHz, Open drain		2.8		Ω
Dynamic Characteristics Reverse						
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=50V, f=100KHz		2136		pF
Output Capacitance	C_{oss}			331.5		
Reverse transfer capacitance	C_{rss}			10.6		
Turn-On Delay Time	$T_{d(on)}$	V_{GS}=10V, V_{DS}=50V, R_G =2Ω, I_D =25A		22.9		nS
Rise Time	T_r			6.5		
Turn-Off Delay Time	$T_{d(off)}$			45.7		
Fall Time	T_f			20.4		
Gate Charge Characteristics						
Total gate charge	Q_g	I_D =25A ,V_{DS}=50V , V_{GS}=10V		30		pF
Gate-source charge	Q_{gs}			5.8		
Gate-drain charge	Q_{gd}			6.1		
Gate plateau voltage	$V_{plateau}$			3.6		V
Drain-Source Body Diode Characteristics						
Diode forward voltage	V_{SD}	V_{GS}=0V ,I_S=1A			1.2	V

Typical Characteristics

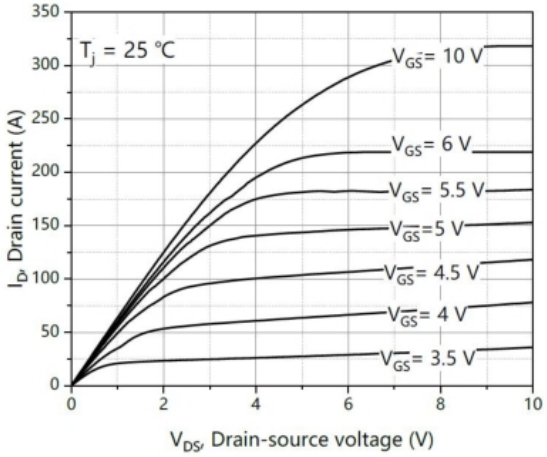


Figure 1, Typ. output characteristics

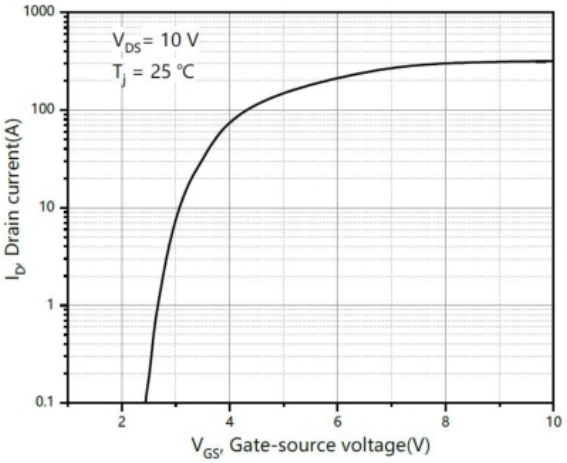


Figure 2, Typ. transfer characteristics

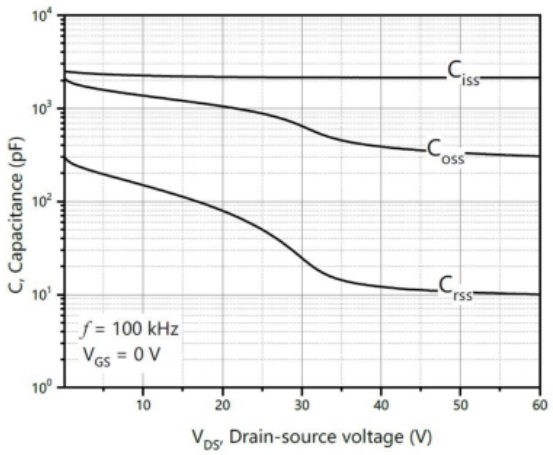


Figure 3, Typ. capacitances

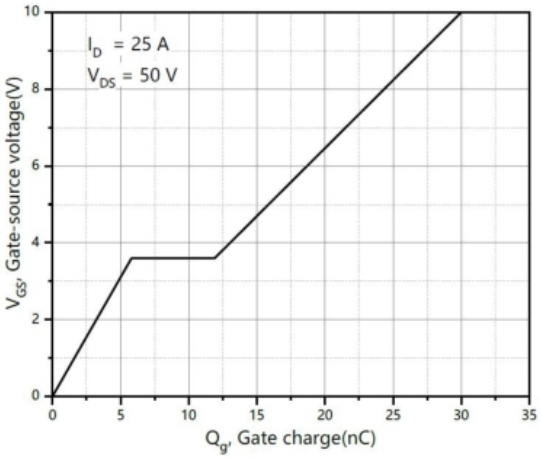


Figure 4, Typ. gate charge

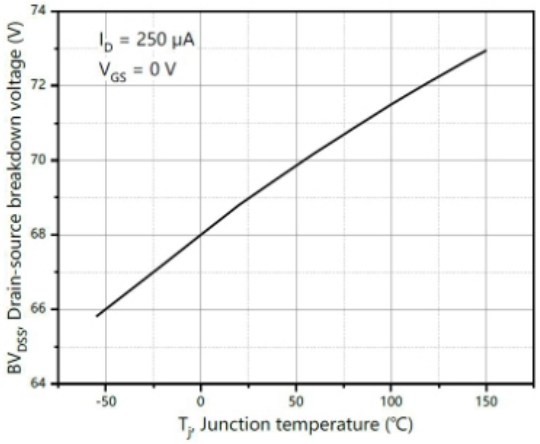


Figure 5, Drain-source breakdown voltage

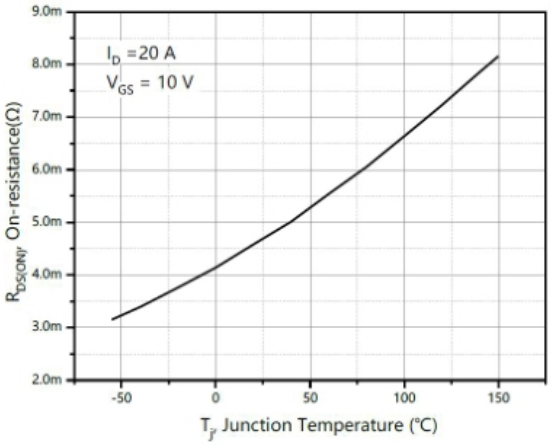


Figure 6, Drain-source on-state resistance

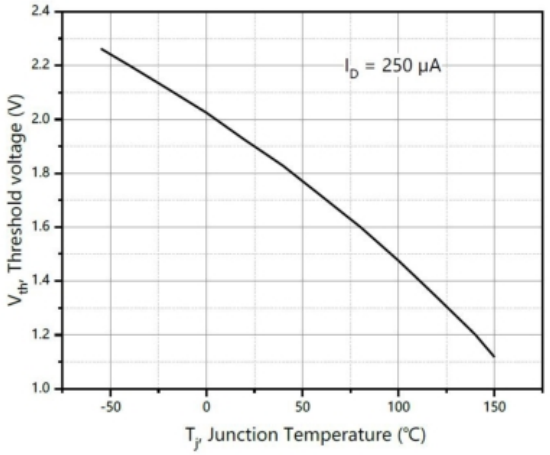


Figure 7, Threshold voltage

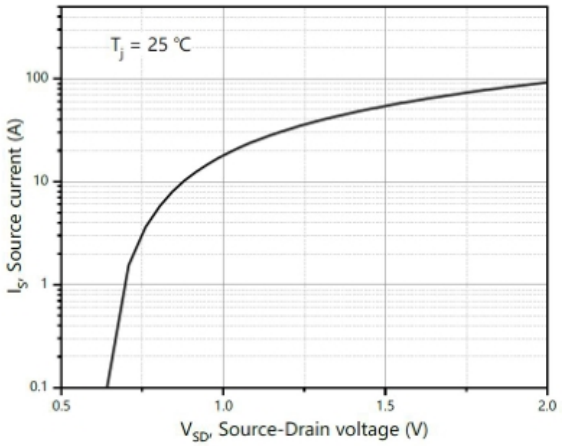


Figure 8, Forward characteristic of body diode

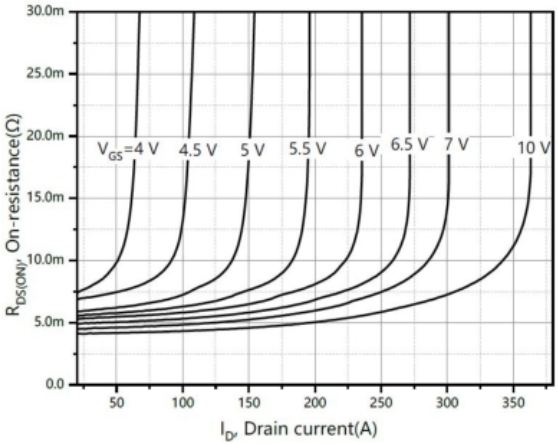


Figure 9, Drain-source on-state resistance

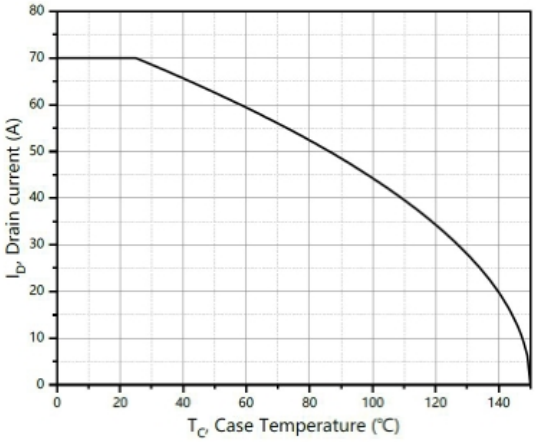


Figure 10, Drain current

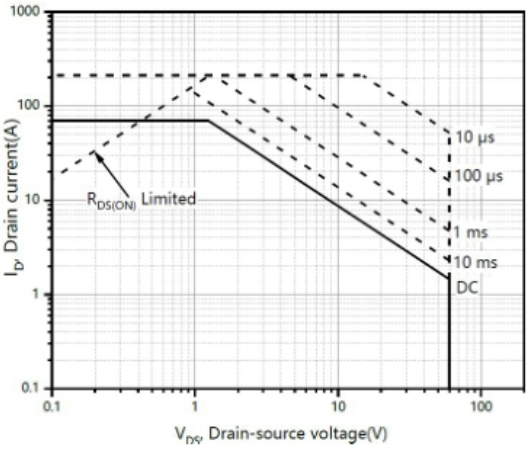


Figure 11, Safe operation area for TO252/ PDFN5*6/TO220 T_C=25 ℃

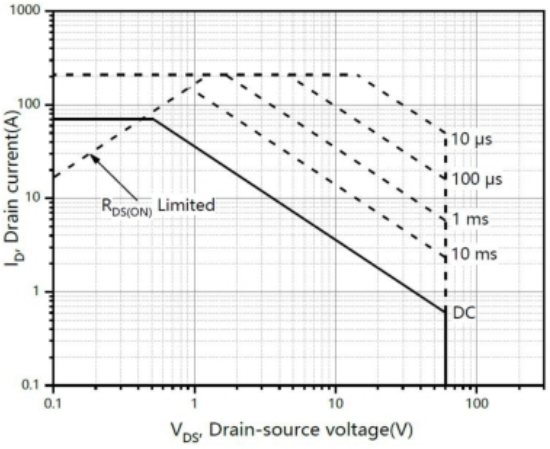
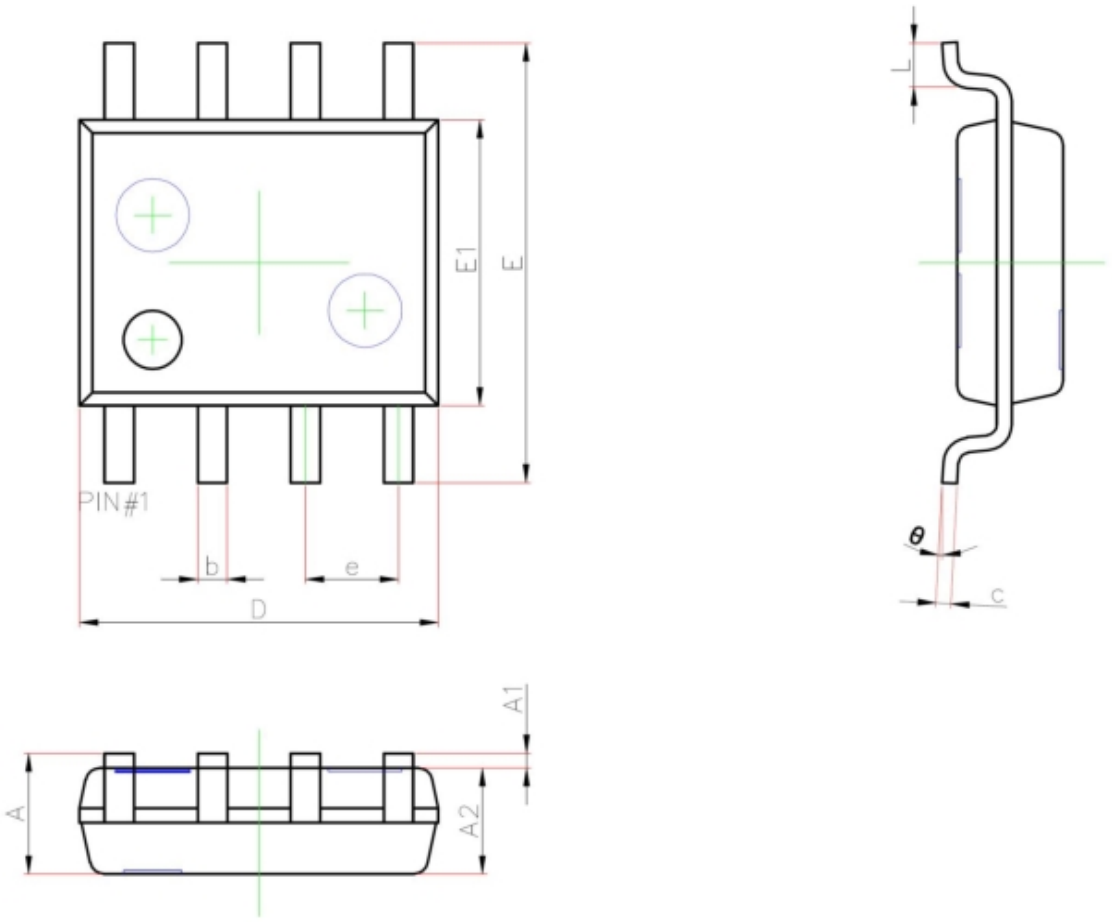


Figure 12, Safe operation area for TO220F T_C=25 ℃

SOP-8 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.35	1.75
A1	0.10	0.25
A2	1.35	1.55
b	0.33	0.51
c	0.17	0.25
D	4.80	5.00
e	1.27 REF.	
E	5.80	6.20
E1	3.80	4.00
L	0.40	1.27
θ	0°	8°