Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	23mΩ@10V	5.5A
	30mΩ@4.5V	

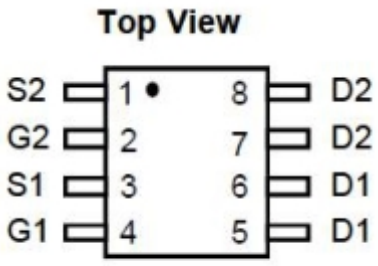
Feature

- High density cell design for ultra low Rdson
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high EAS
- Excellent package for good heat dissipation
- Special process technology for high ESD capability

Applications

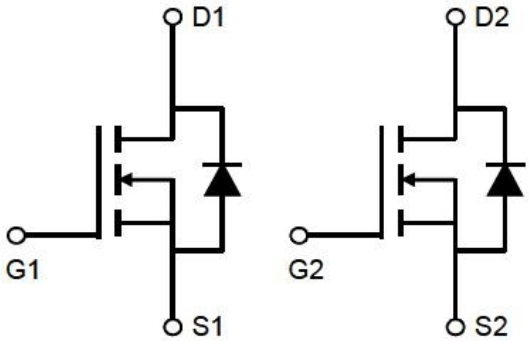
- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

Package

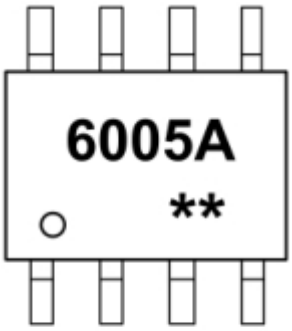


SOP-8

Circuit diagram



Marking



6005A =Device 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	5.5	A
Pulsed Drain Current	I_{DM}	22	A
Power Dissipation	P_D	2	W
Thermal Resistance from Junction to Ambient[2)]	$R_{\theta JA}$	62.5	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

Electrical characteristics

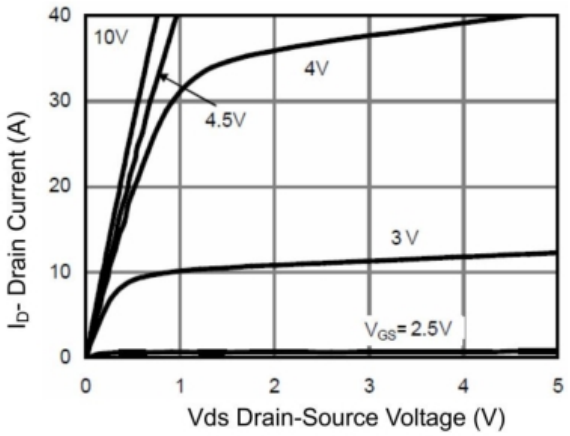
(T_A=25℃, unless otherwise noted)

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
Zero gate voltage drain current	I_{DSS}	V_{DS} =60V, V_{GS} = 0V			1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	uA
Gate threshold voltage (1)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.5	2.5	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =5A		23	35	mΩ
		V_{GS} =4.5V, I_D =5A		30	45	
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=5A	11			S
Dynamic Characteristics4)						
Input Capacitance	C_{iss}	V_{DS}=30V, V_{GS}=0V, f=1MHz		979		pF
Output Capacitance	C_{oss}			120		
Reverse Transfer Capacitance	C_{rss}			100		
Switching Characteristics4)						
Turn-on Delay Time	$T_{d(on)}$	V_{GEN}=10V, V_{DD}=15V, R_{GEN}=3Ω, R_L=1.5Ω		4.4		nS
Turn-on Rise Time	T_r			9		
Turn-Off Delay Time	$T_{d(off)}$			17		
Turn-Off Fall Time	t_f			6		
Total Gate Charge	Q_g	V_{DS} =30V, V_{GS}=10V, I_D=5A		22		nC
Gate-Source Charge	Q_{gs}			3.3		
Gate-Drain Charge	Q_{gd}			5.2		
Source-Drain Diode Characteristics						
Body diode voltage	V_{SD}	I_S=5A, V_{GS}=0V			1.2	V

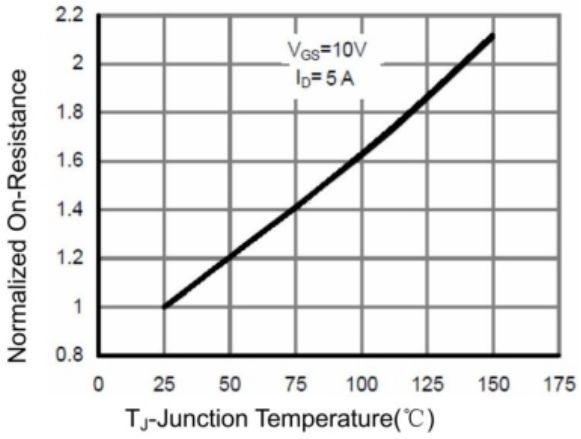
Notes:

1. Repetitive rating: Pulse width limited by junction temperature.
2. Surface mounted on FR4 board, t≤10s.
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%.
4. Guaranteed by design, not subject to production.

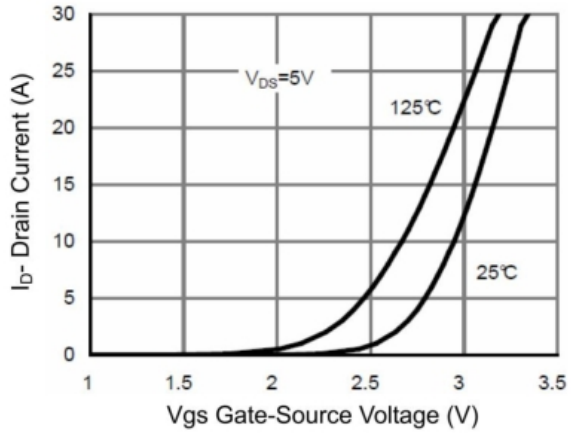
Typical Characteristics



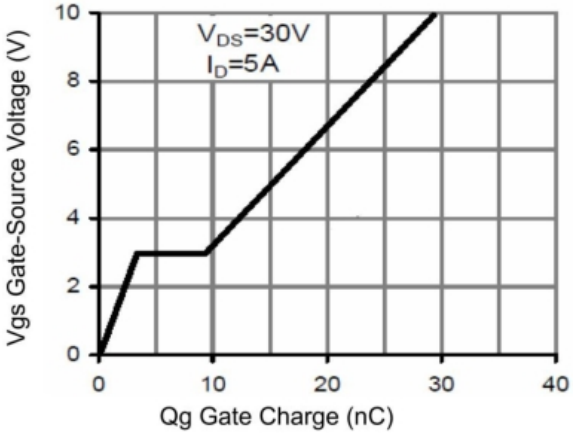
Output Characteristics



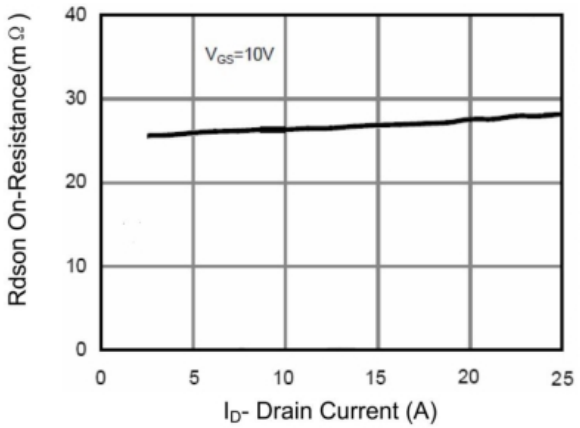
Rdson-Junction Temperature



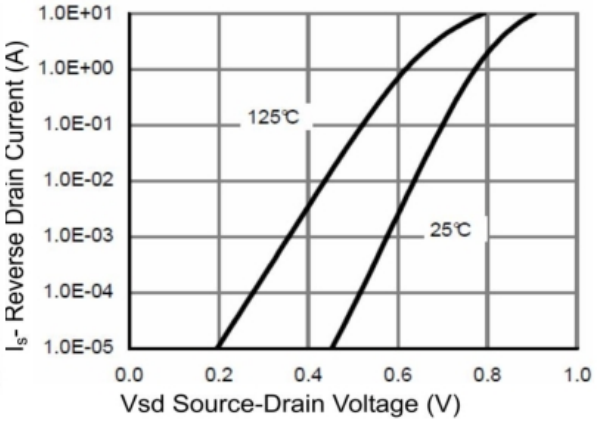
Transfer Characteristics



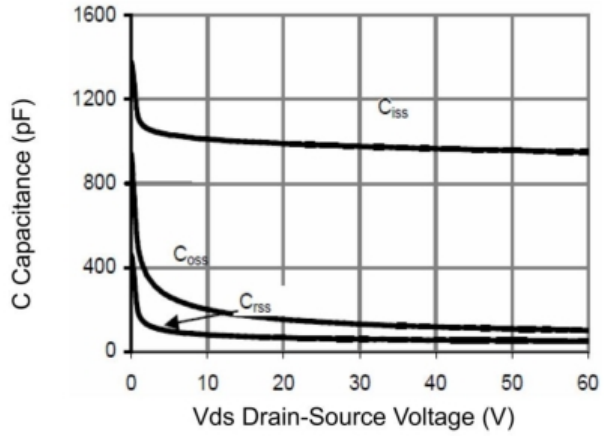
Gate Charge



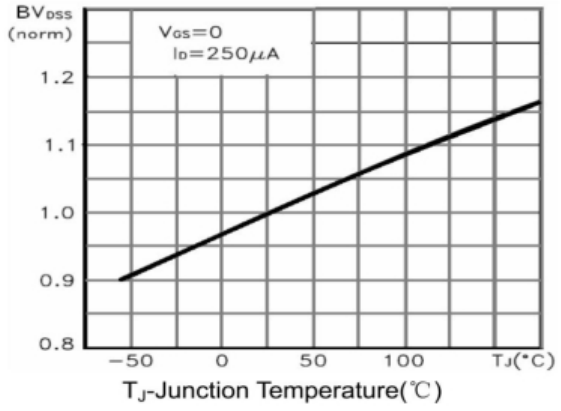
Rdson- Drain Current



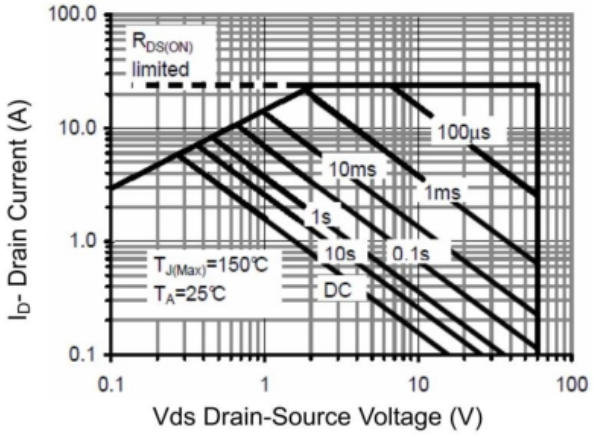
Source- Drain Diode Forward



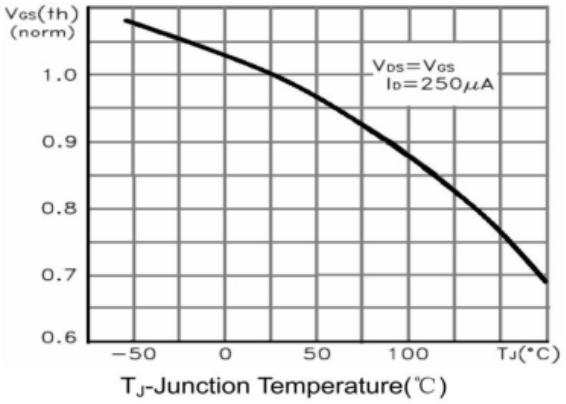
Capacitance vs Vds



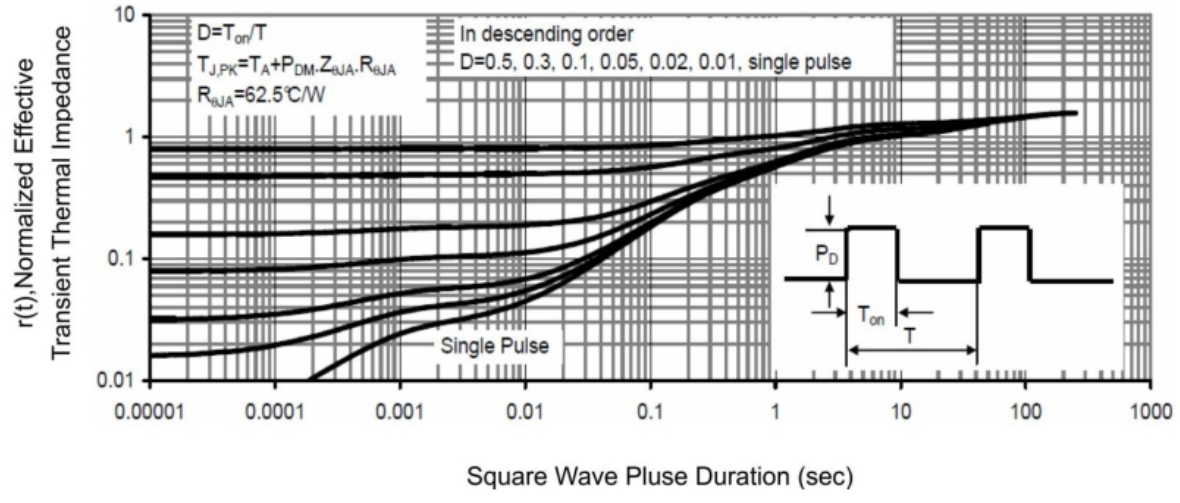
BV_{DSS} vs Junction Temperature



Safe Operation Area

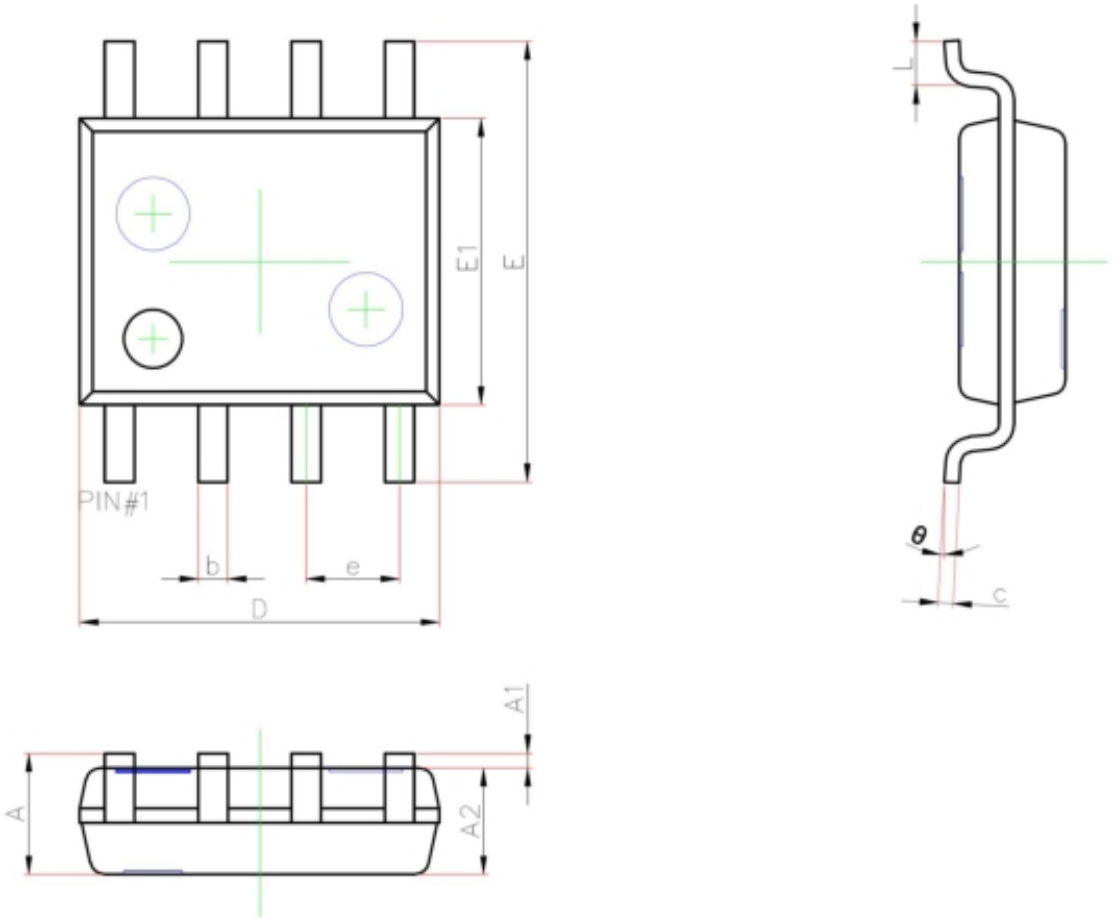


$V_{GS(th)}$ vs Junction Temperature



Normalized Maximum Transient Thermal Impedance

SOT-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°