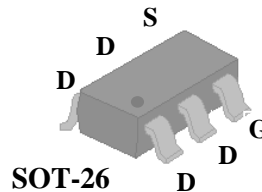




- ▼ Fast Switching Characteristic
- ▼ Lower Gate Charge
- ▼ Small Footprint & Low Profile Package

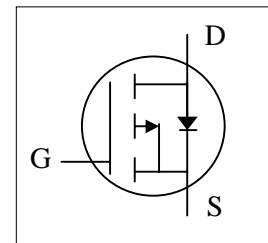


BV_{DSS}	-30V
$R_{DS(ON)}$	80mΩ
I_D	-4A

Description

Advanced Power MOSFETs utilized advanced processing techniques to achieve the lowest possible on-resistance, extremely efficient and cost-effectiveness device.

The SOT-26 package is widely used for commercial-industrial applications.



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_A=25^\circ C$	Continuous Drain Current ³	-4	A
$I_D@T_A=70^\circ C$	Continuous Drain Current ³	-3.3	A
I_{DM}	Pulsed Drain Current ¹	-20	A
$P_D@T_A=25^\circ C$	Total Power Dissipation	2	W
	Linear Derating Factor	0.016	W/°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Value	Unit
Rthj-a	Maximum Thermal Resistance, Junction-ambient ³	62.5	°C/W



AP2605GY

Electrical Characteristics @ $T_j=25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=-250\mu A$	-30	-	-	V
$\Delta BV_{DSS}/\Delta T_j$	Breakdown Voltage Temperature Coefficient	Reference to 25°C , $I_D=-1mA$	-	-0.02	-	$V/^\circ\text{C}$
$R_{DS(ON)}$	Static Drain-Source On-Resistance ²	$V_{GS}=-10V, I_D=-4A$	-	-	80	$m\Omega$
		$V_{GS}=-4.5V, I_D=-3A$	-	-	120	$m\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-	-3	V
g_{fs}	Forward Transconductance	$V_{DS}=-5V, I_D=-4A$	-	6	-	S
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-30V, V_{GS}=0V$	-	-	-1	μA
	Drain-Source Leakage Current ($T_j=70^\circ\text{C}$)	$V_{DS}=-24V, V_{GS}=0V$	-	-	-25	μA
I_{GSS}	Gate-Source Leakage	$V_{GS}=\pm 20V$	-	-	± 100	nA
Q_g	Total Gate Charge ²	$I_D=-4A$	-	5.5	8.8	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=-24V$	-	1	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	$V_{GS}=-4.5V$	-	2.6	-	nC
$t_{d(on)}$	Turn-on Delay Time ²	$V_{DS}=-15V$	-	7	-	ns
t_r	Rise Time	$I_D=-1A$	-	6	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=3.3\Omega, V_{GS}=-10V$	-	18	-	ns
t_f	Fall Time	$R_D=15\Omega$	-	4	-	ns
C_{iss}	Input Capacitance	$V_{GS}=0V$	-	400	640	pF
C_{oss}	Output Capacitance	$V_{DS}=-25V$	-	90	-	pF
C_{rss}	Reverse Transfer Capacitance	$f=1.0MHz$	-	30	-	pF

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage ²	$I_S=-1.6A, V_{GS}=0V$	-	-	-1.2	V
t_{rr}	Reverse Recovery Time ²	$I_S=-4A, V_{GS}=0V,$	-	21	-	ns
Q_{rr}	Reverse Recovery Charge	$dI/dt=100A/\mu s$	-	14	-	nC

Notes:

1. Pulse width limited by Max. junction temperature.
2. Pulse test
3. Surface mounted on 1 in² copper pad of FR4 board ; 156°C/W when mounted on min. copper pad.

THIS PRODUCT IS AN ELECTROSTATIC SENSITIVE, PLEASE HANDLE WITH CAUTION.

THIS PRODUCT HAS BEEN QUALIFIED FOR CONSUMER MARKET. APPLICATIONS OR USES AS CRITICAL COMPONENT IN LIFE SUPPORT DEVICE OR SYSTEM ARE NOT AUTHORIZED.

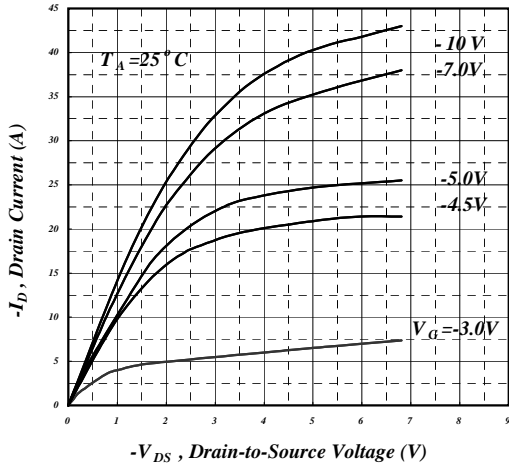


Fig 1. Typical Output Characteristics

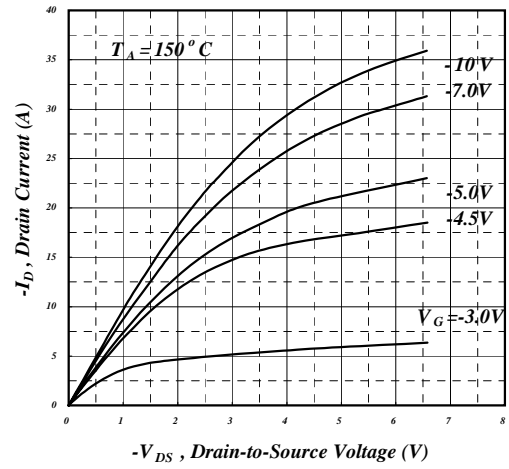


Fig 2. Typical Output Characteristics

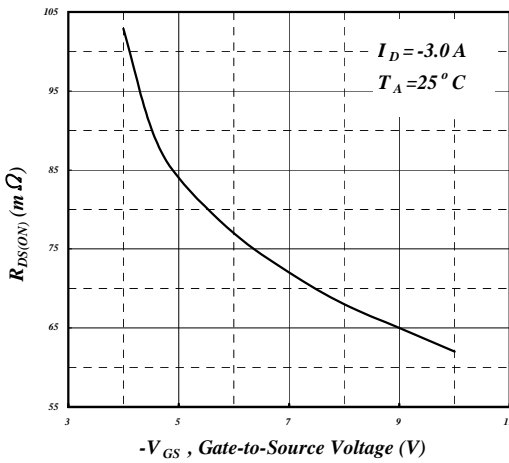


Fig 3. On-Resistance v.s. Gate Voltage

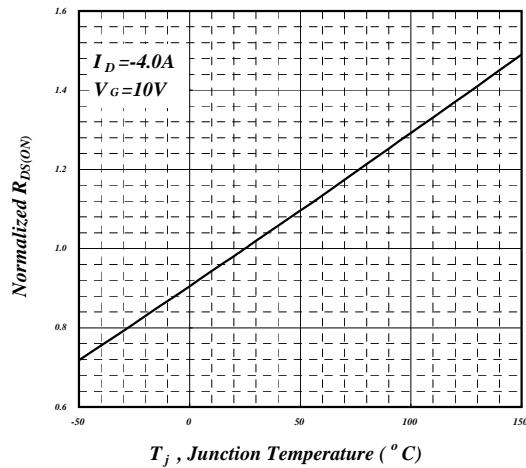


Fig 4. Normalized On-Resistance v.s. Junction Temperature

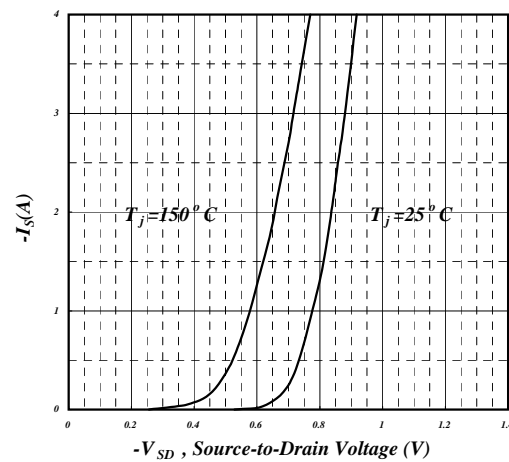


Fig 5. Forward Characteristic of Reverse Diode

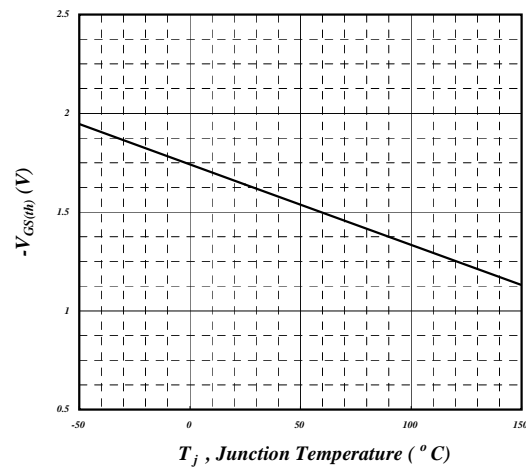


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

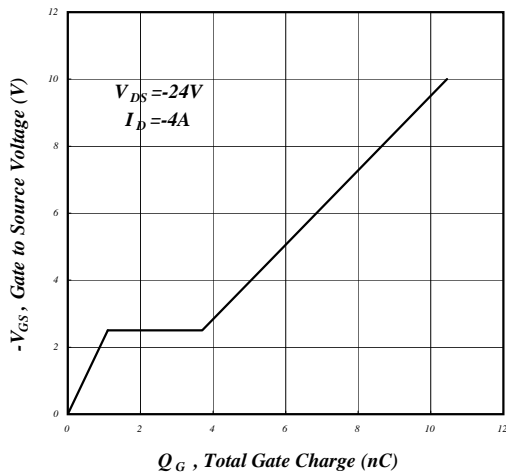


Fig 7. Gate Charge Characteristics

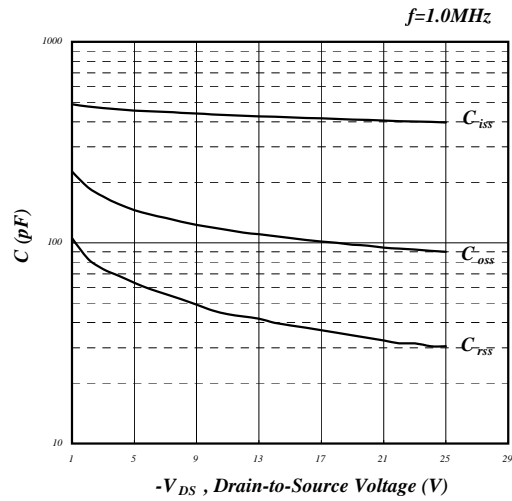


Fig 8. Typical Capacitance Characteristics

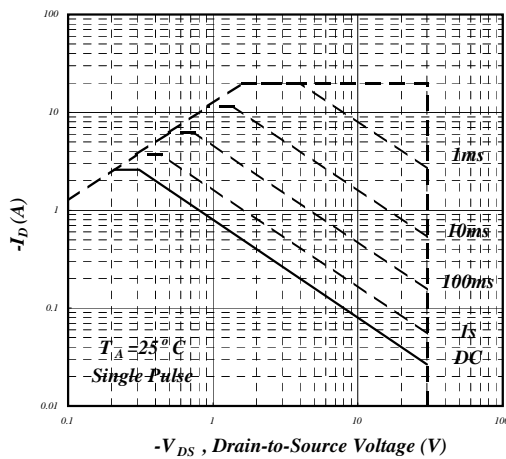


Fig 9. Maximum Safe Operating Area

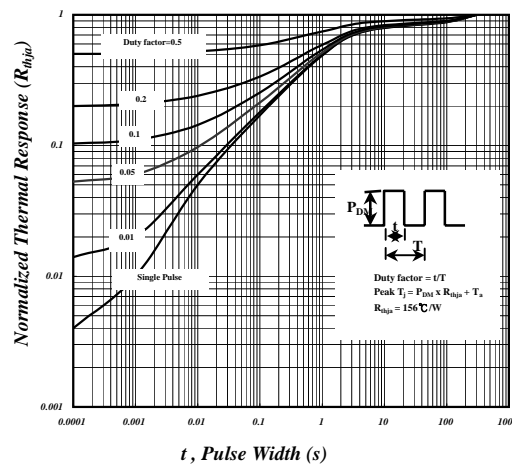


Fig 10. Effective Transient Thermal Impedance

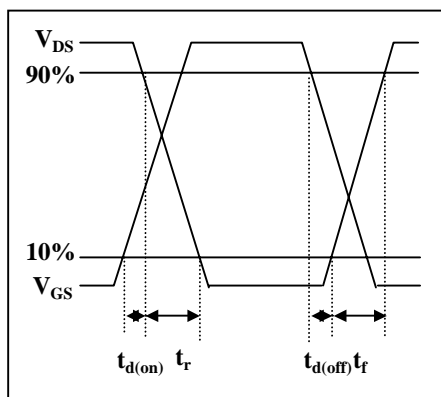


Fig 11. Switching Time Waveform

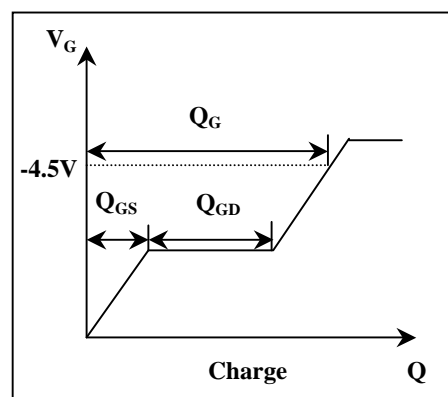
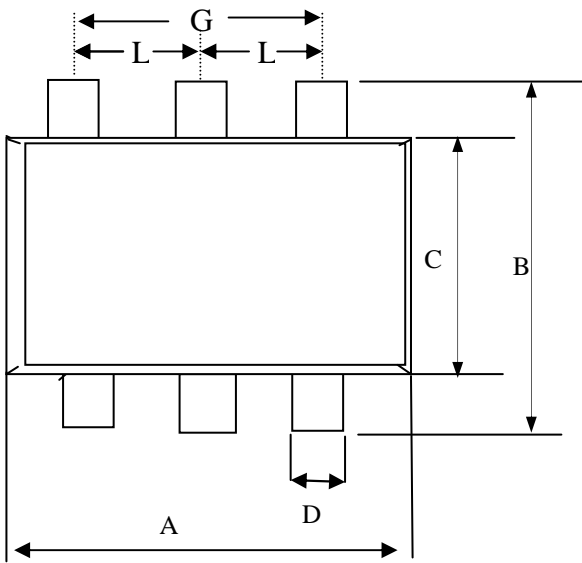


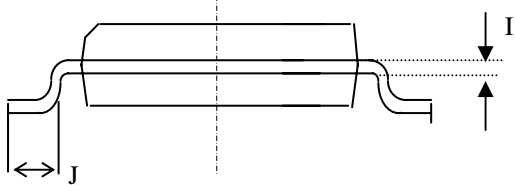
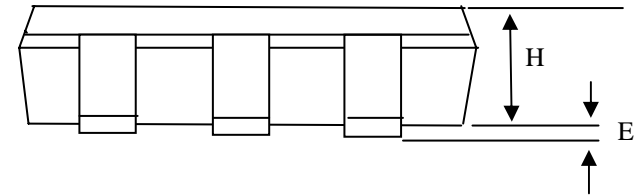
Fig 12. Gate Charge Waveform



Package Outline : SOT-26



SYMBOLS	Millimeters		
	MIN	NOM	MAX
A	2.70	2.90	3.10
B	2.60	2.80	3.00
C	1.40	1.60	1.80
D	0.30	0.43	0.55
E	0.00	0.05	0.10
H	1.20REF		
G	1.90REF		
I	0.12REF		
J	0.37REF		
L	0.95REF		



- 1.All Dimension Are In Millimeters.
- 2.Dimension Does Not Include Mold Protrusions.

Part Marking Information & Packing : SOT-26

