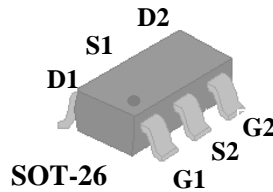




- ▼ Low Gate Charge
- ▼ Low On-resistance
- ▼ Surface Mount Package
- ▼ RoHS Compliant & Halogen-Free

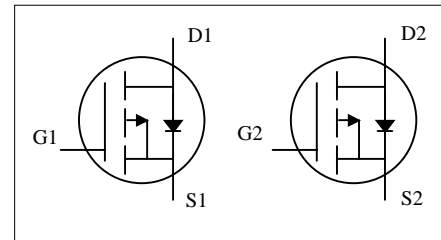


$BV_{DSS}$	-30V
$R_{DS(ON)}$	170m $\Omega$
$I_D$	- 2A

### Description

AP2623 series are from Advanced Power innovated design and silicon process technology to achieve the lowest possible on-resistance and fast switching performance. It provides the designer with an extreme efficient device for use in a wide range of power applications.

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



### Absolute Maximum Ratings @ $T_j=25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	-30	V
$V_{GS}$	Gate-Source Voltage	+20	V
$I_D @ T_A=25^\circ\text{C}$	Drain Current <sup>3</sup> , $V_{GS}$ @ 10V	-2	A
$I_D @ T_A=70^\circ\text{C}$	Drain Current <sup>3</sup> , $V_{GS}$ @ 10V	-1.6	A
$I_{DM}$	Pulsed Drain Current <sup>1</sup>	-20	A
$P_D @ T_A=25^\circ\text{C}$	Total Power Dissipation	1.2	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

### Thermal Data

Symbol	Parameter	Value	Unit
Rthj-a	Maximum Thermal Resistance, Junction-ambient <sup>3</sup>	110	$^\circ\text{C}/\text{W}$



# AP2623GY-HF

## Electrical Characteristics @T<sub>j</sub>=25°C(unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =-250uA	-30	-	-	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance <sup>2</sup>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-2A	-	-	170	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-1.6A	-	-	280	mΩ
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250uA	-1	-	-3	V
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =-5V, I <sub>D</sub> =-2A	-	2	-	S
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =-24V, V <sub>GS</sub> =0V	-	-	-10	uA
I <sub>GSS</sub>	Gate-Source Leakage	V <sub>GS</sub> = ±20V, V <sub>DS</sub> =0V	-	-	±100	nA
Q <sub>g</sub>	Total Gate Charge	I <sub>D</sub> =-2A	-	2.8	4.5	nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DS</sub> =-24V	-	0.5	-	nC
Q <sub>gd</sub>	Gate-Drain ("Miller") Charge	V <sub>GS</sub> =-4.5V	-	1.4	-	nC
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>DS</sub> =-15V	-	5	-	ns
t <sub>r</sub>	Rise Time	I <sub>D</sub> =-1A	-	6	-	ns
t <sub>d(off)</sub>	Turn-off Delay Time	R <sub>G</sub> =3.3Ω	-	15	-	ns
t <sub>f</sub>	Fall Time	V <sub>GS</sub> =-10V	-	3	-	ns
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V	-	150	240	pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> =-25V	-	42	-	pF
C <sub>rss</sub>	Reverse Transfer Capacitance	f=1.0MHz	-	32	-	pF

## Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V <sub>SD</sub>	Forward On Voltage <sup>2</sup>	I <sub>S</sub> =-1A, V <sub>GS</sub> =0V	-	-	-1.2	V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>S</sub> =-2A, V <sub>GS</sub> =0V,	-	20	-	ns
Q <sub>rr</sub>	Reverse Recovery Charge	di/dt=100A/μs	-	13	-	nC

### Notes:

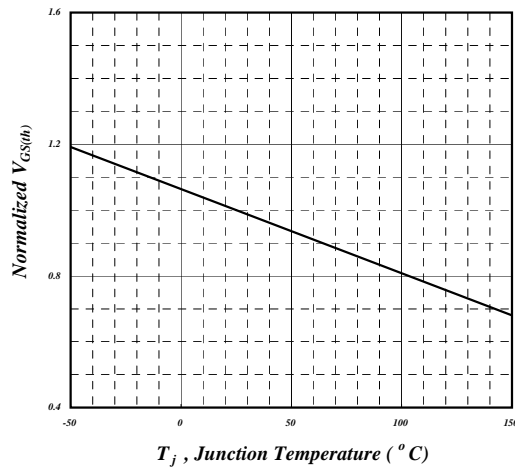
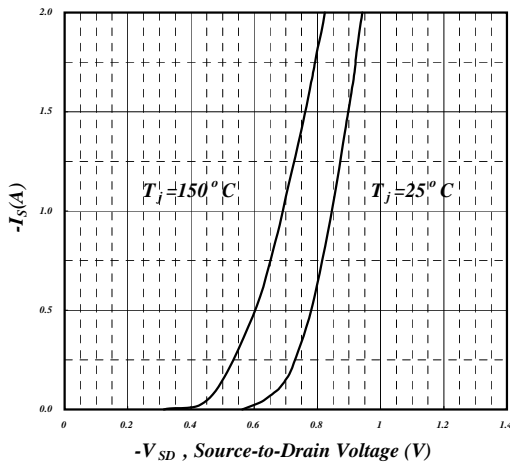
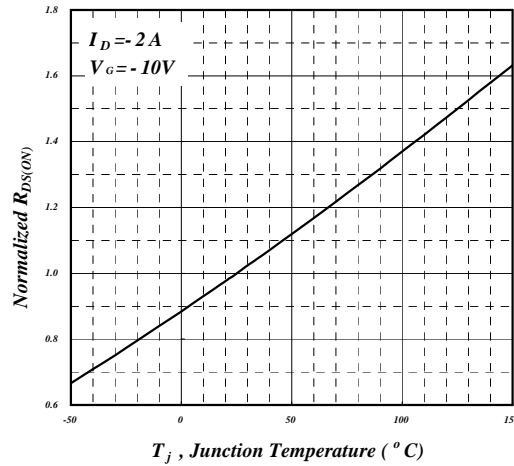
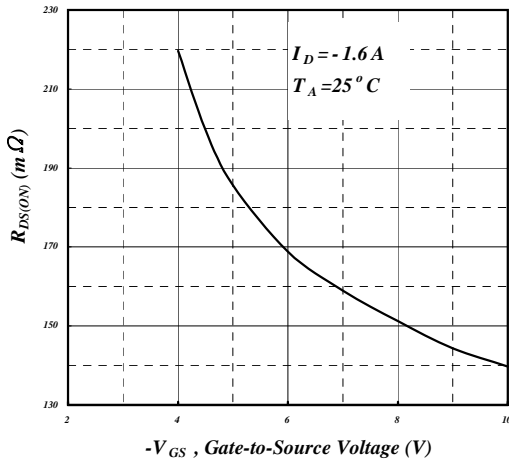
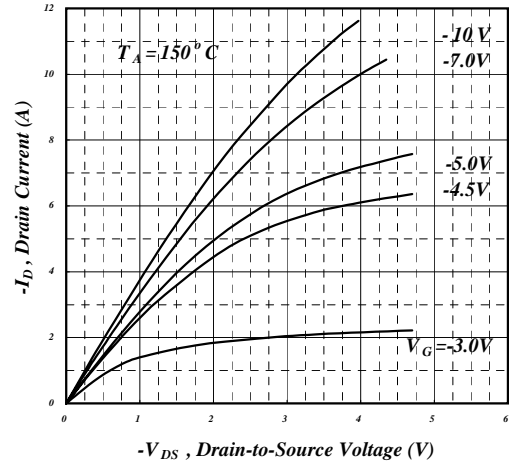
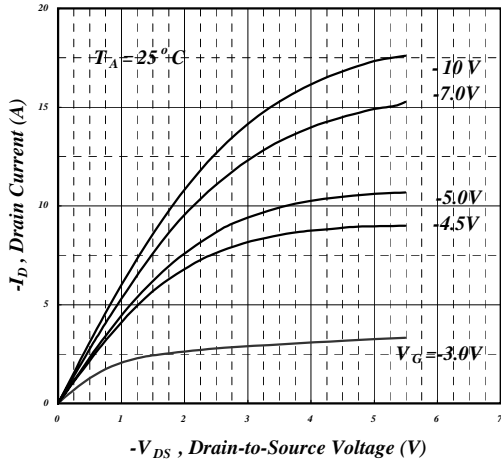
- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test
- 3.Surface mounted on 1 in<sup>2</sup> copper pad of FR4 board, t<sub>sec</sub>≤5sec ; 180°C/W when mounted on min. copper pad.

THIS PRODUCT IS SENSITIVE TO ELECTROSTATIC DISCHARGE, PLEASE HANDLE WITH CAUTION.

USE OF THIS PRODUCT AS A CRITICAL COMPONENT IN LIFE SUPPORT OR OTHER SIMILAR SYSTEMS IS NOT AUTHORIZED.

APEC DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

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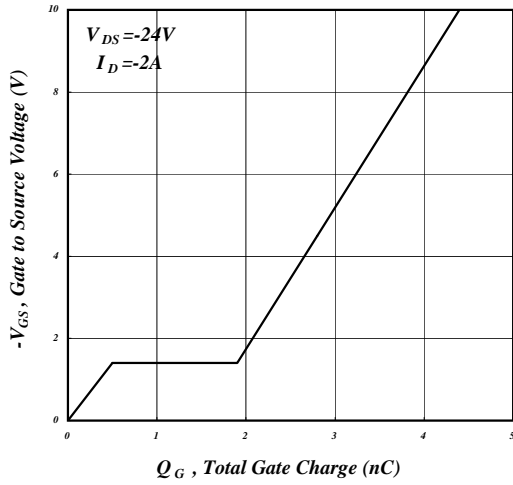


Fig 7. Gate Charge Characteristics

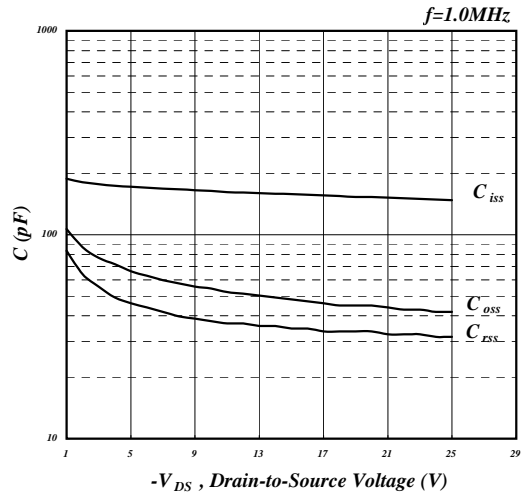


Fig 8. Typical Capacitance Characteristics

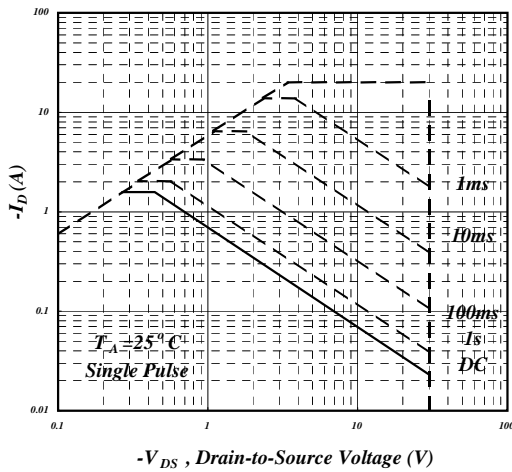


Fig 9. Maximum Safe Operating Area

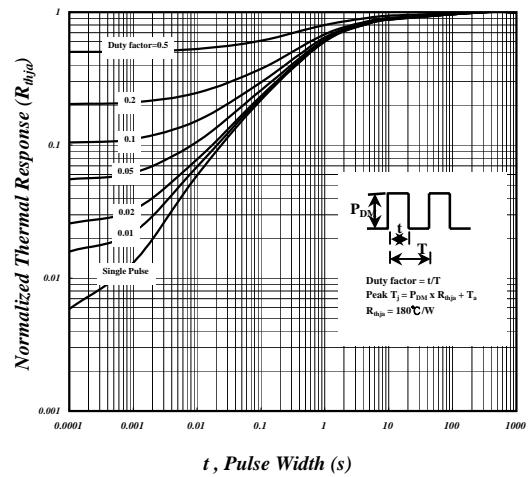


Fig 10. Effective Transient Thermal Impedance

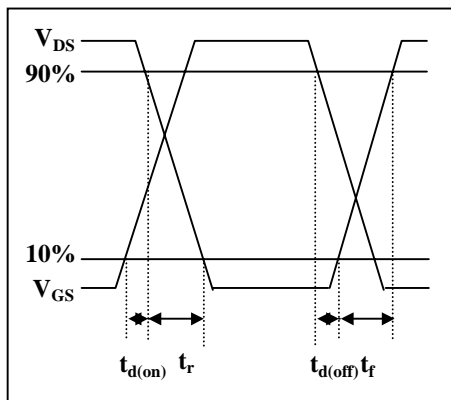


Fig 11. Switching Time Waveform

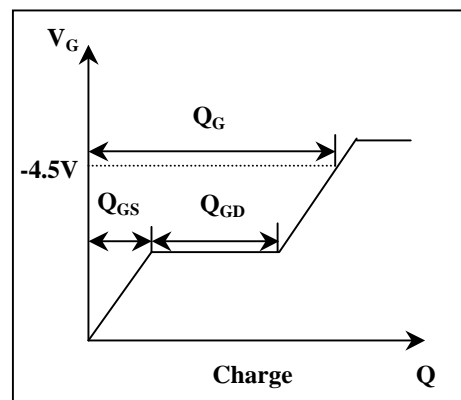
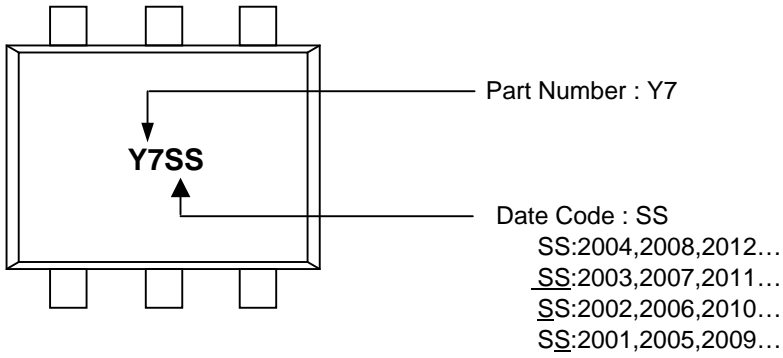


Fig 12. Gate Charge Waveform



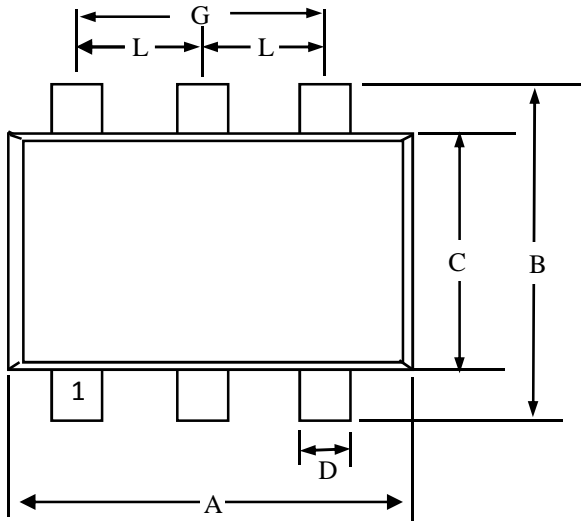
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**MARKING INFORMATION**

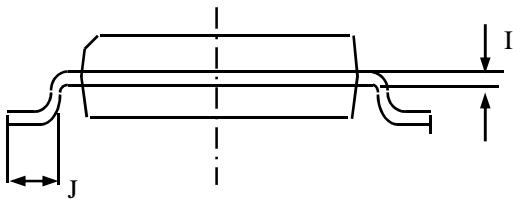
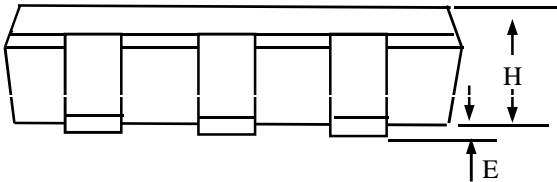




## Package Outline : SOT-26



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	0.40	0.50
E	0.00	0.05	0.10
H	1.00	1.15	1.30
G	—	1.95 (ref.)	—
I	0.10	0.15	0.20
J	0.30	0.45	0.60
L	—	0.95 (ref.)	—



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



SOT-26 FOOTPRINT :

