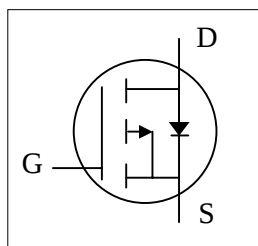
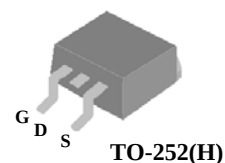




- ▼ Lower Gate Charge
- ▼ Simple Drive Requirement
- ▼ Fast Switching Characteristic



BV_{DSS}	-40V
$R_{DS(ON)}$	65m Ω
I_D	-13.6A



Description

Advanced Power MOSFETs from APEC provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness.

The TO-252 package is widely preferred for commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-40	V
V_{GS}	Gate-Source Voltage	+20	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current, V_{GS} @ 10V	-13.6	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current, V_{GS} @ 10V	-8.6	A
I_{DM}	Pulsed Drain Current ¹	-50	A
$P_D@T_C=25^{\circ}C$	Total Power Dissipation	20.8	W
T_{STG}	Storage Temperature Range	-55 to 150	$^{\circ}C$
T_J	Operating Junction Temperature Range	-55 to 150	$^{\circ}C$

Thermal Data

Symbol	Parameter	Value	Units
Rthj-c	Maximum Thermal Resistance Junction-case	6.0	$^{\circ}C/W$
Rthj-a	Maximum Thermal Resistance Junction-ambient	110	$^{\circ}C/W$



AP9566GH

Electrical Characteristics@T_j=25°C(unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250uA	-40	-	-	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-10V, I _D =-10A	-	-	65	mΩ
		V _{GS} =-4.5V, I _D =-6A	-	-	100	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1	-	-3	V
g _{fs}	Forward Transconductance	V _{DS} =-10V, I _D =-6A	-	6	-	S
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-32V, V _{GS} =0V	-	-	-1	uA
	Drain-Source Leakage Current (T _j =125°C)	V _{DS} =-32V, V _{GS} =0V	-	-	-25	uA
I _{GSS}	Gate-Source Leakage	V _{GS} = ±20V	-	-	±100	nA
Q _g	Total Gate Charge ²	I _D =-6A	-	6.5	10.5	nC
Q _{gs}	Gate-Source Charge	V _{DS} =-32V	-	1.6	-	nC
Q _{gd}	Gate-Drain ("Miller") Charge	V _{GS} =-4.5V	-	3.6	-	nC
t _{d(on)}	Turn-on Delay Time ²	V _{DS} =-20V	-	6.5	-	ns
t _r	Rise Time	I _D =-6A	-	15	-	ns
t _{d(off)}	Turn-off Delay Time	R _G =3.3Ω, V _{GS} =-10V	-	20	-	ns
t _f	Fall Time	R _D =3.3Ω	-	4.5	-	ns
C _{iss}	Input Capacitance	V _{GS} =0V	-	580	930	pF
C _{oss}	Output Capacitance	V _{DS} =-25V	-	70	-	pF
C _{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	55	-	pF

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V _{SD}	Forward On Voltage ²	I _S =-6A, V _{GS} =0V	-	-	-1.2	V
t _{rr}	Reverse Recovery Time ²	I _S =-6A, V _{GS} =0V,	-	21	-	ns
Q _{rr}	Reverse Recovery Charge	dI/dt=-100A/μs	-	17	-	nC

Notes:

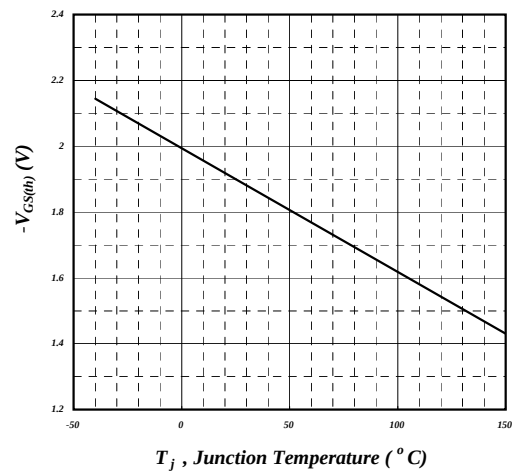
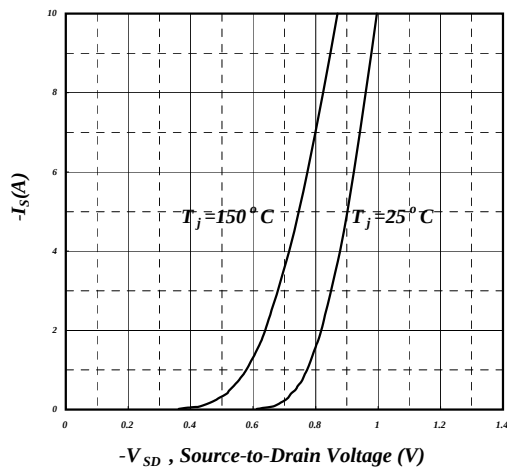
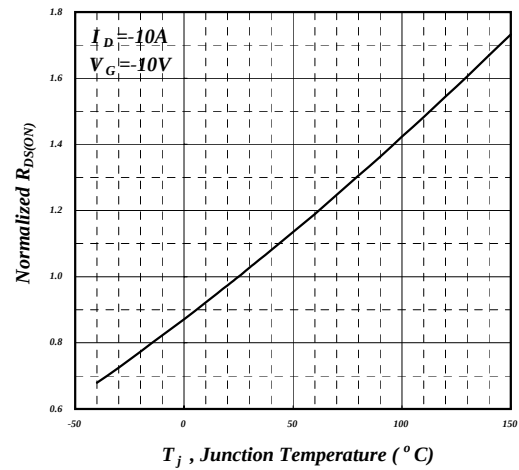
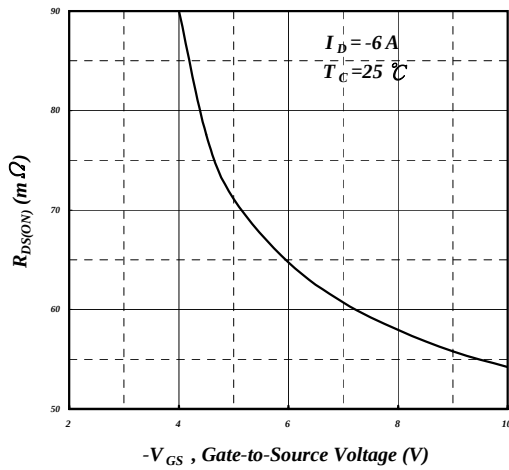
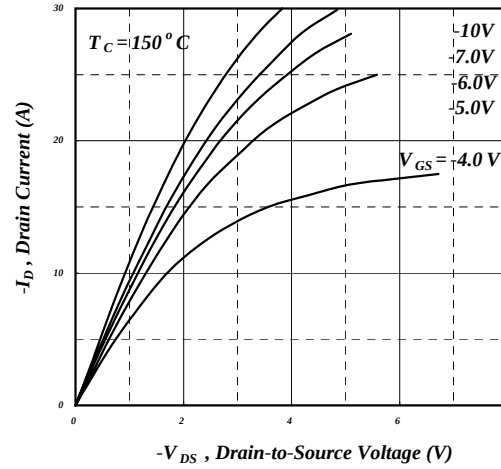
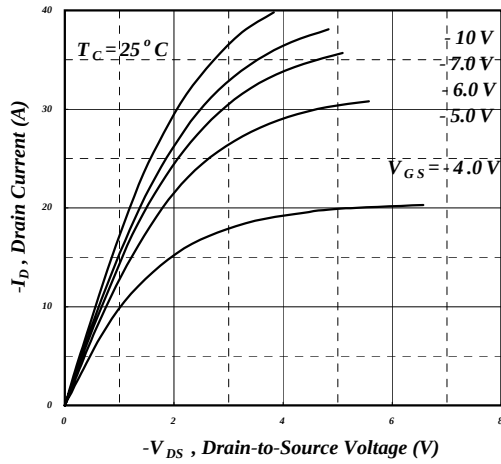
- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test

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.

APEC RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN.



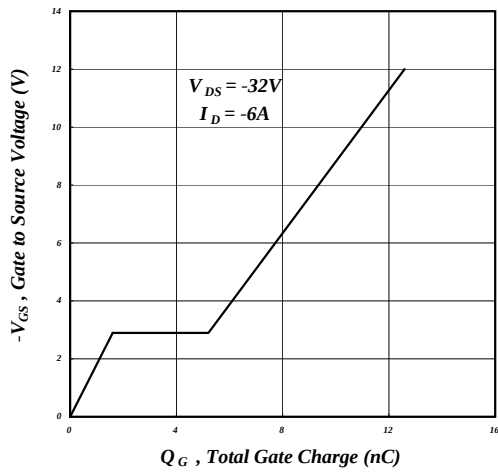


Fig 7. Gate Charge Characteristics

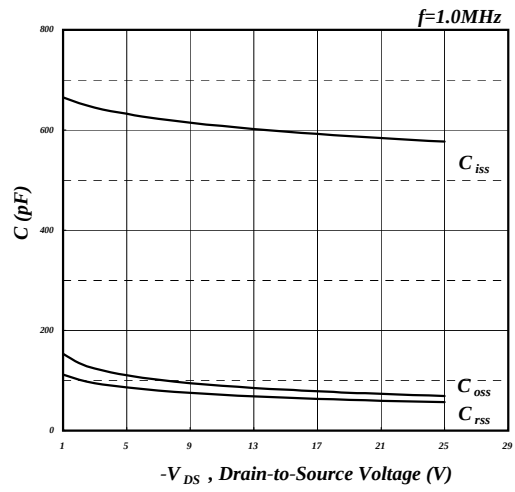


Fig 8. Typical Capacitance Characteristics

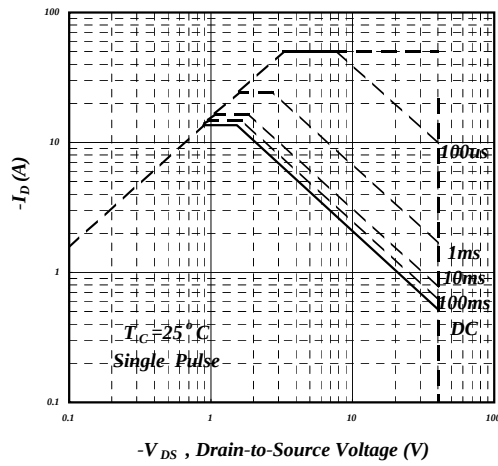


Fig 9. Maximum Safe Operating Area

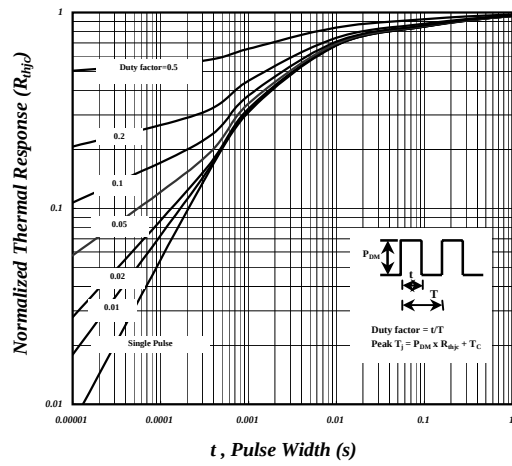


Fig 10. Effective Transient Thermal Impedance

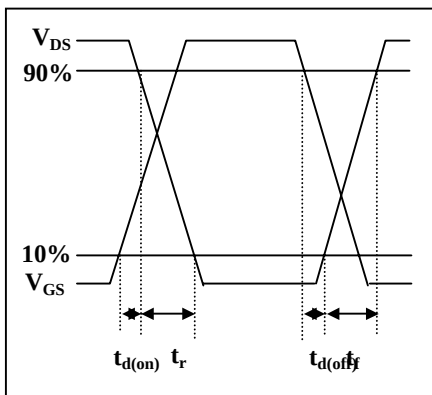


Fig 11. Switching Time Waveform

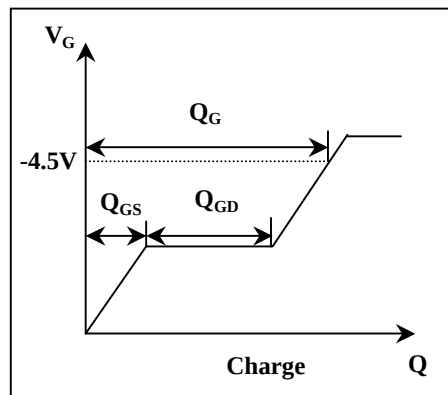
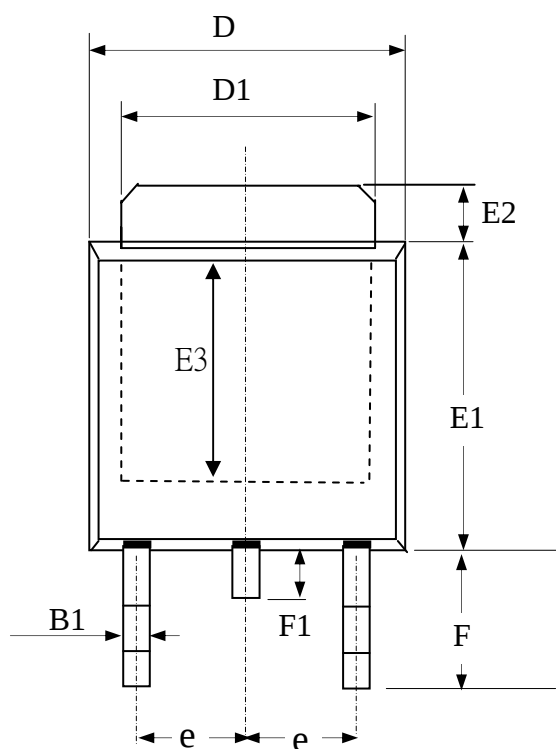


Fig 12. Gate Charge Waveform



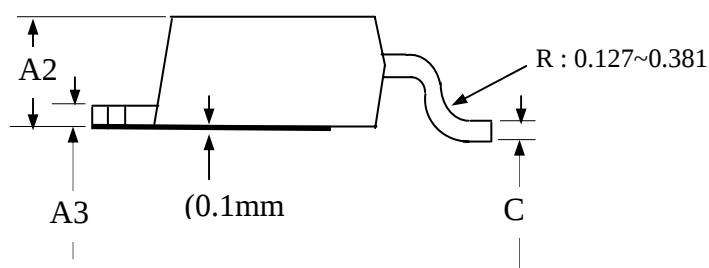
Package Outline : TO-252



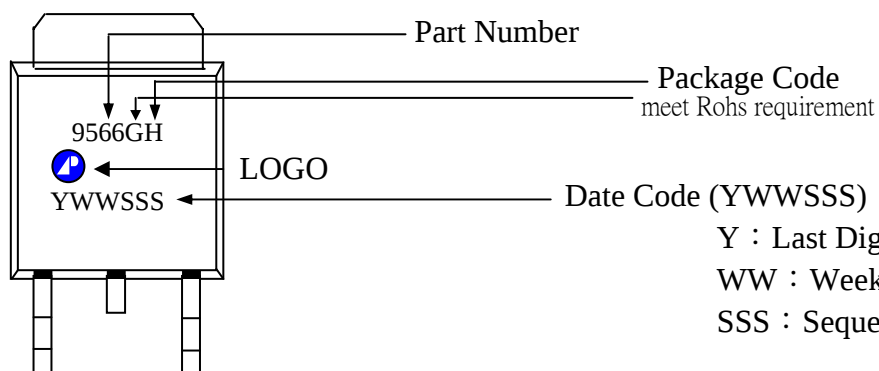
SYMBOLS	Millimeters		
	MIN	NOM	MAX
A2	1.80	2.30	2.80
A3	0.40	0.50	0.60
B1	0.40	0.70	1.00
D	6.00	6.50	7.00
D1	4.80	5.35	5.90
E3	3.50	4.00	4.50
F	2.20	2.63	3.05
F1	0.5	0.85	1.20
E1	5.10	5.70	6.30
E2	0.50	1.10	1.80
e	--	2.30	--
C	0.35	0.50	0.65

1.All Dimensions Are in Millimeters.

2.Dimension Does Not Include Mold Protrusions.



Part Marking Information & Packing : TO-252



Y : Last Digit Of The Year
WW : Week
SSS : Sequence