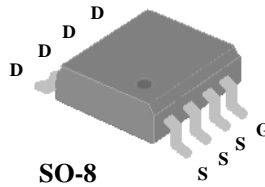




- ▼ Simple Drive Requirement
- ▼ Lower Gate Charge
- ▼ Fast Switching Characteristic
- ▼ RoHS Compliant & Halogen-Free

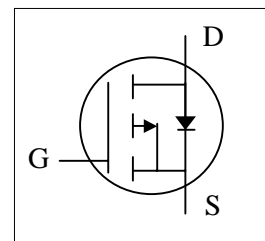


BV_{DSS}	-40V
$R_{DS(ON)}$	52m Ω
I_D	-5.5A

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 SO-8 package is widely preferred for all 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
$I_D@T_A=25^\circ C$	Continuous Drain Current ³	-5.5	A
$I_D@T_A=70^\circ C$	Continuous Drain Current ³	-4.4	A
I_{DM}	Pulsed Drain Current ¹	-20	A
$P_D@T_A=25^\circ C$	Total Power Dissipation	2.5	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	Unit
Rthj-a	Maximum Thermal Resistance, Junction-ambient ³	50	$^\circ C/W$



AP9565BGM-HF

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	$V_{GS}=0V, I_D=-250\mu A$	-40	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance ²	$V_{GS}=-10V, I_D=-5A$	-	-	52	m Ω
		$V_{GS}=-4.5V, I_D=-3A$	-	-	90	m Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-	-3	V
g_{fs}	Forward Transconductance	$V_{DS}=-10V, I_D=-5A$	-	6	-	S
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=-32V, V_{GS}=0V$	-	-	-10	μA
I_{GSS}	Gate-Source Leakage	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Q_g	Total Gate Charge	$I_D=-5A$	-	7.5	-	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=-20V$	-	1.5	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	$V_{GS}=-4.5V$	-	5	-	nC
$t_{d(on)}$	Turn-on Delay Time	$V_{DS}=-20V$	-	8	-	ns
t_r	Rise Time	$I_D=-5A$	-	15	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=3.3\Omega$	-	20	-	ns
t_f	Fall Time	$V_{GS}=-10V$	-	20	-	ns
C_{iss}	Input Capacitance	$V_{GS}=0V$	-	530	-	pF
C_{oss}	Output Capacitance	$V_{DS}=-25V$	-	110	-	pF
C_{rSS}	Reverse Transfer Capacitance	$f=1.0\text{MHz}$	-	75	-	pF

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage ²	$I_S=-2.1A, V_{GS}=0V$	-	-	-1.2	V
t_{rr}	Reverse Recovery Time	$I_S=-5A, V_{GS}=0V,$	-	20	-	ns
Q_{rr}	Reverse Recovery Charge	$dI/dt=-100A/\mu s$	-	15	-	nC

Notes:

1. Pulse width limited by Max. junction temperature.
2. Pulse test
3. Surface mounted on 1 in² copper pad of FR4 board ; 125 °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.

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