

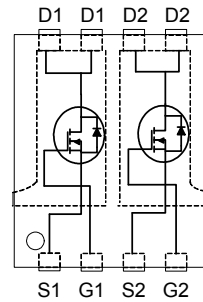


- ▼ Simple Drive Requirement
- ▼ Fast Switching Characteristic
- ▼ RoHS Compliant & Halogen-Free

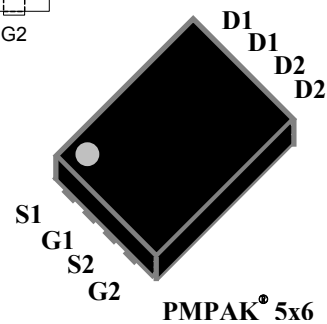
Description

AP10A035 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.

PMPAK[®] 5x6 dual pad provide superior thermal performance and is design for surface mount applications.



BV_{DSS}	100V
$R_{DS(ON)}$	35mΩ



Absolute Maximum Ratings@T_j=25°C(unless otherwise specified)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^{\circ}C$	Drain Current, V_{GS} @ 10V	17.7	A
$I_D@T_A=25^{\circ}C$	Drain Current, V_{GS} @ 10V ³	7.3	A
$I_D@T_A=70^{\circ}C$	Drain Current, V_{GS} @ 10V ³	5.8	A
I_{DM}	Pulsed Drain Current ¹	30	A
$P_D@T_A=25^{\circ}C$	Total Power Dissipation	3.57	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Rating	Units
Rthj-c	Maximum Thermal Resistance, Junction-case	6	°C/W
Rthj-a	Maximum Thermal Resistance, Junction-ambient ³	35	°C/W



AP10A035MT

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	100	-	-	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =7A	-	-	35	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	2	-	4	V
g _{fs}	Forward Transconductance	V _{DS} =5V, I _D =7A	-	13	-	S
I _{DSS}	Drain-Source Leakage Current	V _{DS} =80V, V _{GS} =0V	-	-	25	uA
I _{GSS}	Gate-Source Leakage	V _{GS} =±20V, V _{DS} =0V	-	-	±0.1	uA
Q _g	Total Gate Charge	I _D =7A	-	12.5	20	nC
Q _{gs}	Gate-Source Charge	V _{DS} =50V	-	3	-	nC
Q _{gd}	Gate-Drain ("Miller") Charge	V _{GS} =10V	-	5	-	nC
t _{d(on)}	Turn-on Delay Time	V _{DS} =50V	-	8	-	ns
t _r	Rise Time	I _D =1A	-	7	-	ns
t _{d(off)}	Turn-off Delay Time	R _G =3.3Ω	-	17	-	ns
t _f	Fall Time	V _{GS} =10V	-	30	-	ns
C _{iss}	Input Capacitance	V _{GS} =0V	-	480	768	pF
C _{oss}	Output Capacitance	V _{DS} =80V	-	80	-	pF
C _{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	15	-	pF
R _g	Gate Resistance	f=1.0MHz	-	0.8	1.6	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V _{SD}	Forward On Voltage ²	I _S =2.9A, V _{GS} =0V	-	-	1.2	V
t _{rr}	Reverse Recovery Time	I _S =7A, V _{GS} =0V	-	35	-	ns
Q _{rr}	Reverse Recovery Charge	di/dt=100A/μs	-	35	-	nC

Notes:

- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test
- 3.Surface mounted on 1 in² copper pad of FR4 board, t ≤10sec ; 85 °C/W on steady state.

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

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

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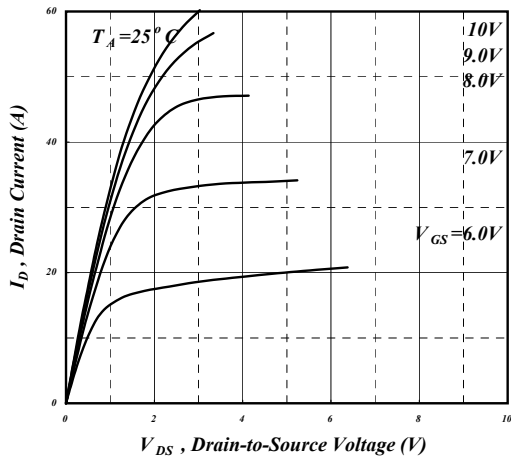


Fig 1. Typical Output Characteristics

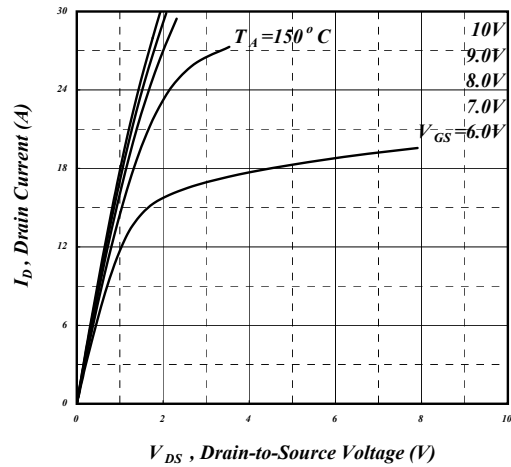


Fig 2. Typical Output Characteristics

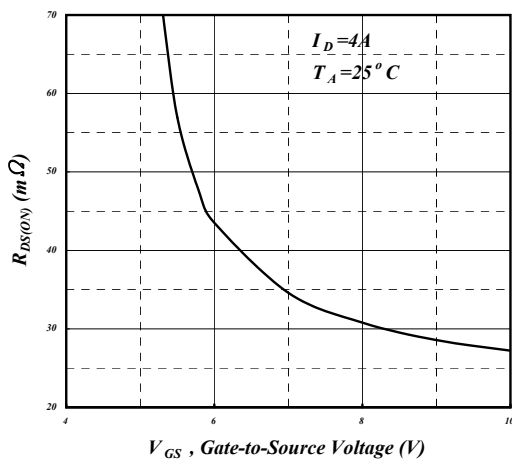


Fig 3. On-Resistance v.s. Gate Voltage

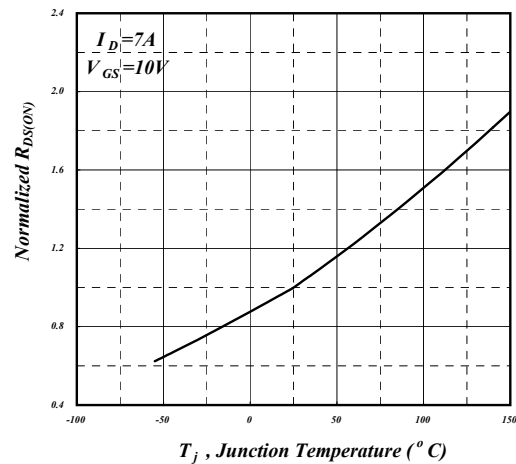


Fig 4. Normalized On-Resistance v.s. Junction Temperature

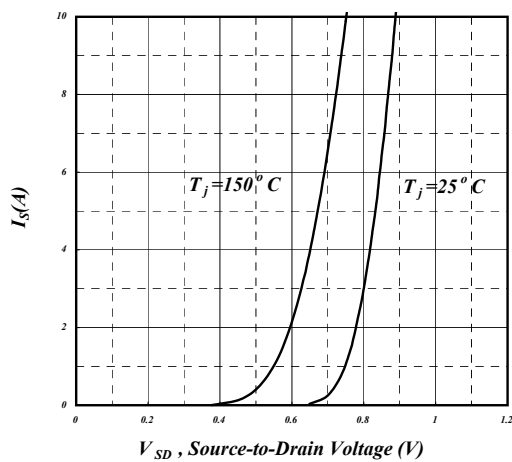


Fig 5. Forward Characteristic of Reverse Diode

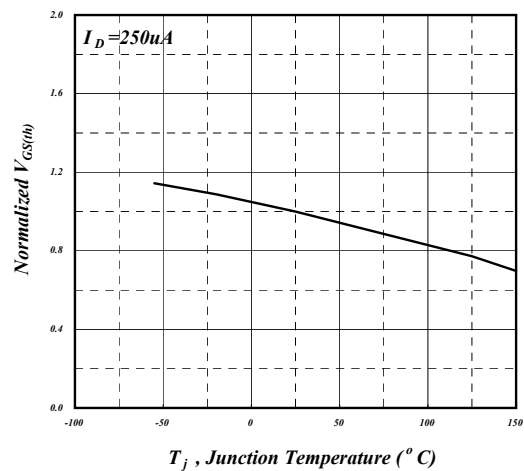


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

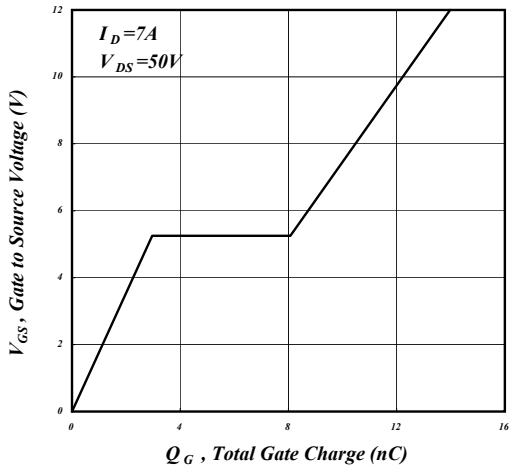


Fig 7. Gate Charge Characteristics

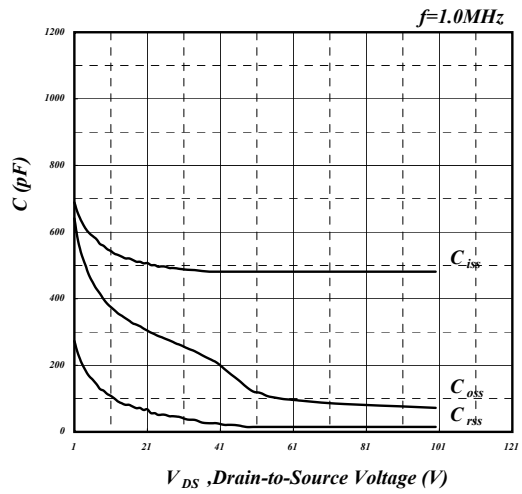


Fig 8. Typical Capacitance Characteristics

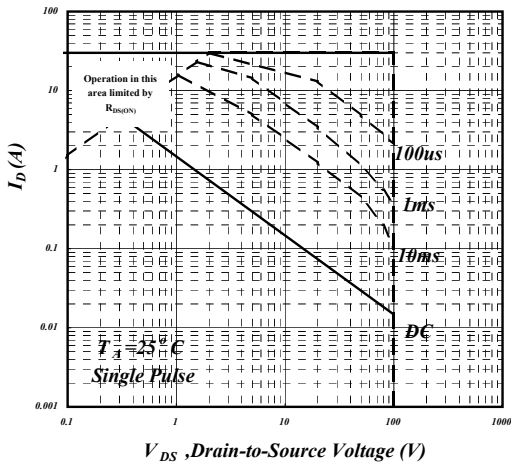


Fig 9. Maximum Safe Operating Area

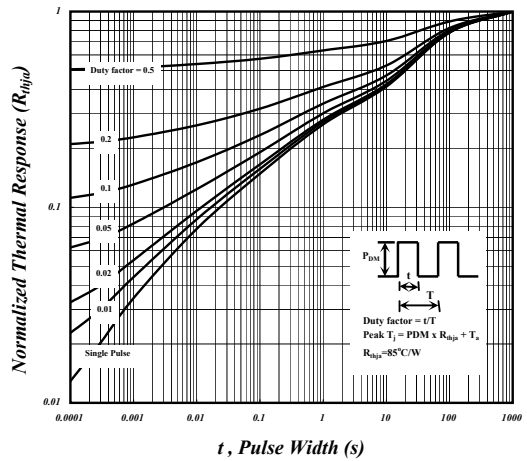


Fig 10. Effective Transient Thermal Impedance

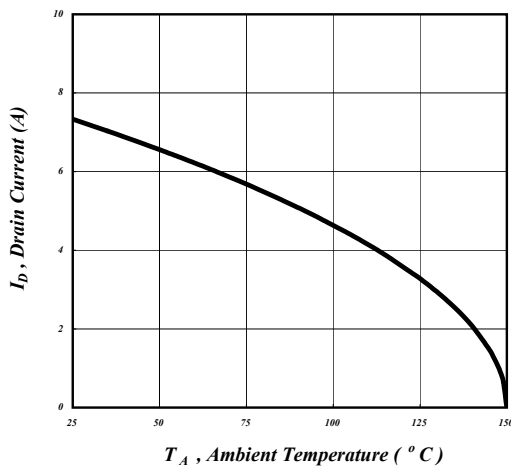


Fig 11. Drain Current v.s. Ambient Temperature

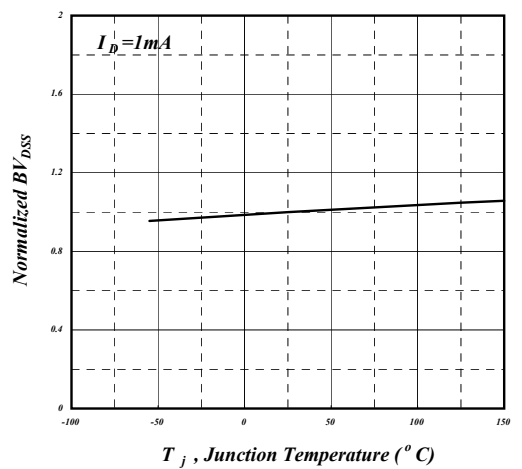


Fig 12. Normalized $BV_{DS(s)}$ v.s. Junction Temperature



MARKING INFORMATION

