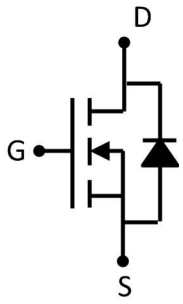
Feature

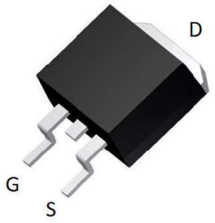
- 55V,110A
  $R_{DS(ON)}$ <8.0mΩ @V_{GS}=10V TYP:7 mΩ
- Advanced Planar stripe DMOS Technology
- Lead free product is acquired
- Excellent $R_{DS(ON)}$ and Low Gate Charge



Schematic diagram

Application

- PWM applications
- Load Switch
- Power management



TO-263 top view

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
3205D	AP3205D	TO-263	-	-	800

ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	55	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (T_a =25℃)	I_D	110	A
Avalanche Current(1)	I_{AS}	62	A
Pulsed Drain Current (1)	I_{DM}	390	A
Single Pulsed Avalanche Energy (2)	E_{AS}	484	mJ
Repetitive Avalanche Energy (2)	E_{AR}	20	mJ
Power Dissipation	P_D	200	W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.8	℃/W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	62	℃/W
Junction Temperature	T_J	175	℃
Storage Temperature	T_{STG}	-55~ +175	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

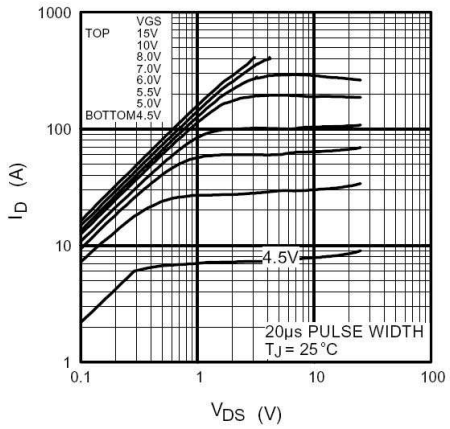
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	55	-	-	V
Zero gate voltage drain current	I_{DSS}	V_{DS} =55V, V_{GS} = 0V	-	-	1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V	-	-	±100	nA
Gate threshold voltage(3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	2.0	-	4.0	V
Drain-source on-resistance(3)	$R_{DS(on)}$	V_{GS} =10V, I_D =30A	-	7.0	8.0	mΩ
Dynamic characteristics						
Input Capacitance	C_{iss}	V_{DS} =25V, V_{GS} =0V, f =1.0MHz	-	3247	-	pF
Output Capacitance	C_{oss}		-	780	-	
Reverse Transfer Capacitance	C_{rss}		-	210	-	
Switching characteristics						
Turn-on delay time	$t_{d(on)}$	V_{DD}=28V, I_D=62A,V_{GS}=10V, R_G=4.5Ω	-	14	-	ns
Turn-on rise time	t_r		-	101	-	
Turn-off delay time	$t_{d(off)}$		-	50	-	
Turn-off fall time	t_f		-	65	-	
Total Gate Charge	Qg	VDS=44V, ID=62A, VGS=10V	-	-	146	nC
Gate-Source Charge	Qgs		-	-	35	
Gate-Drain Charge	Qgd		-	-	54	
Source-Drain Diode characteristics						
Diode Forward voltage(3)	V_{DS}	V_{GS} =0V, I_S=62A	-	-	1.3	V
Diode Forward current(4)	I_S		-	-	110	A
Body Diode Reverse Recovery Time	trr	T_J=25°， IF=62A,di/dt=100A/us		69		ns
Body Diode Reverse Recovery Charge	Qrr	T_J=25°， IF=62A,di/dt=100A/us		143		nc

Notes:

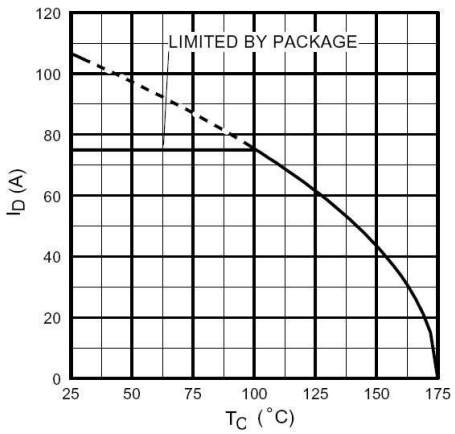
1. Repetitive Rating: pulse width limited by maximum junction temperature
2. EAS Condition:T_J=25℃,V_{DD}=50V,R_G=25Ω,L=0.5Mh,I_{AS}=44A
3. Pulse Test: pulse width≤300μs, duty cycle≤2%
4. Surface Mounted on FR4 Board,t≤10 sec

Typical Electronic and Thermal Characteristics

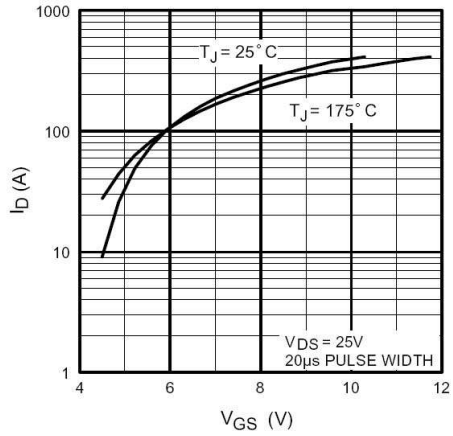
I_D — V_{DS}



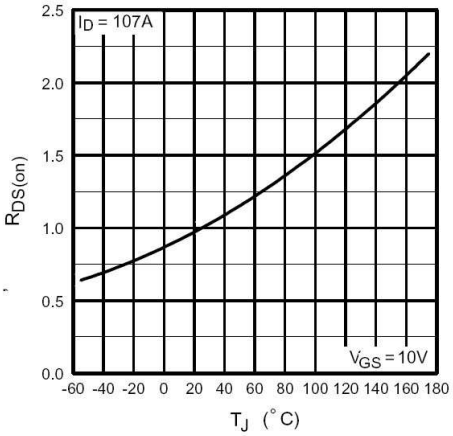
I_D — T_C



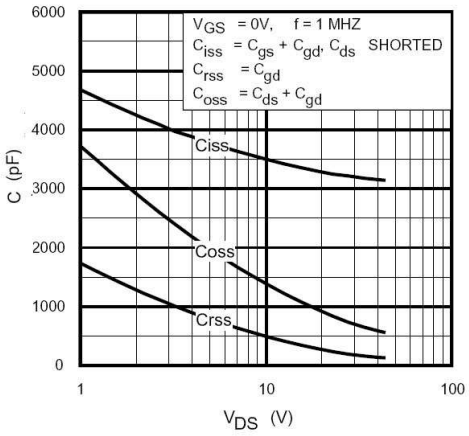
I_D — V_{GS}



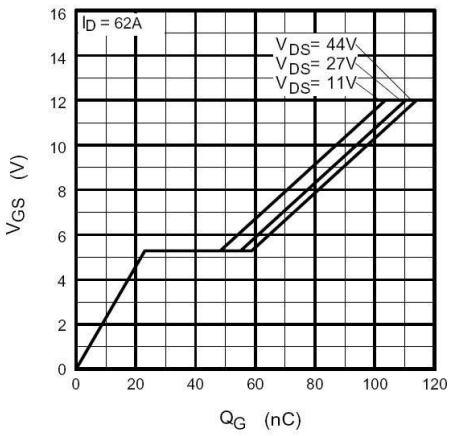
$R_{DS(on)}$ — T_J



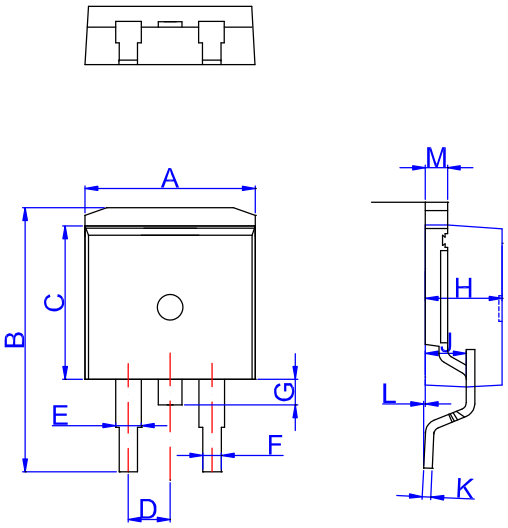
C — V_{DS}



V_{GS} — Q_G



TO-263 Package Information



TO-263

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.4		9.6	0.37		0.378
D		2.54			0.100	
E	1.20		1.40	0.047		0.055
F	0.75		0.85	0.029		0.033
G			1.75			0.069
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053