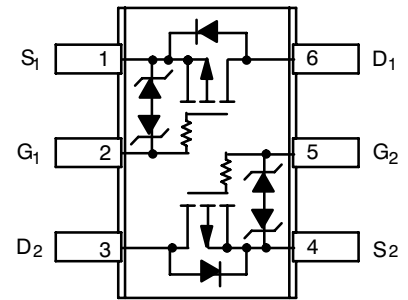
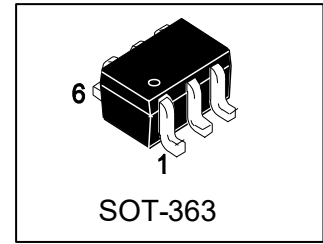


MP21D5D

S-MP21D5D

20V Dual P-Channel MOSFET



1. FEATURES

- ESD Protected Gate.
- Leading Trench Technology for Low RDS(ON) Performance.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

2. APPLICATIONS

- Load/Power Management.
- Charging Circuits.
- Load Switching.
- Cell Phones, Computing, Digital Cameras, MP3s and PDAs.

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
MP21D5D	PT	3000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	10 secs	Steady State	Unit	
Drain-Source Voltage	VDS	-20		V	
Gate-Source Voltage	VGS	±10			
Continuous Drain Current	ID	TA = 25°C	-850	-700	mA
		TA = 70°C	-670	-600	
Pulsed Drain Current (Note2)	IDM	-2000			
Continuous Source Current (Diode Conduction)	IS	-800			
Operating Junction and Storage Temperature Range	TJ , Tstg	-55~+150		°C	
Gate-Source ESD Rating (HBM, Method 3015)	ESD	2000		V	

1. Surface Mounted on FR4 Board.
2. Pulse width limited by maximum junction temperature



5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

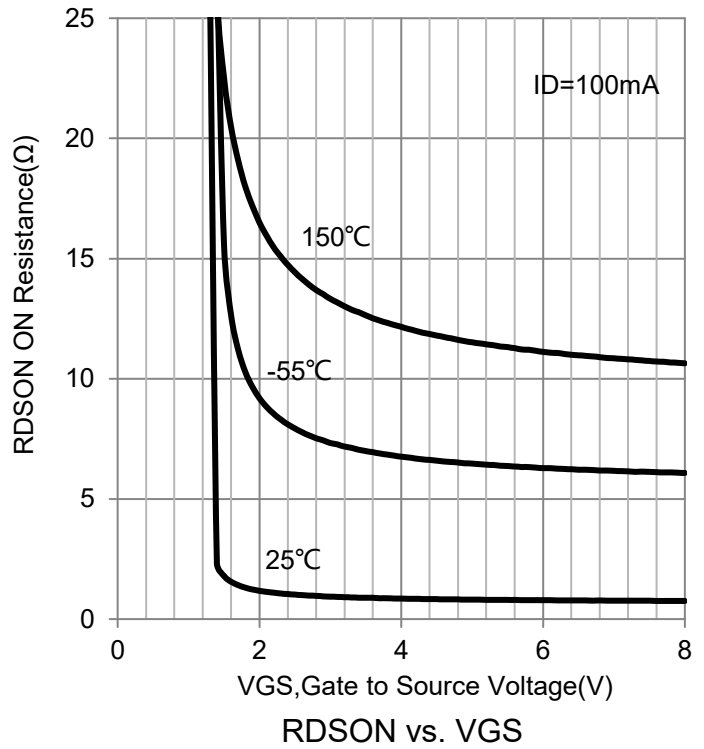
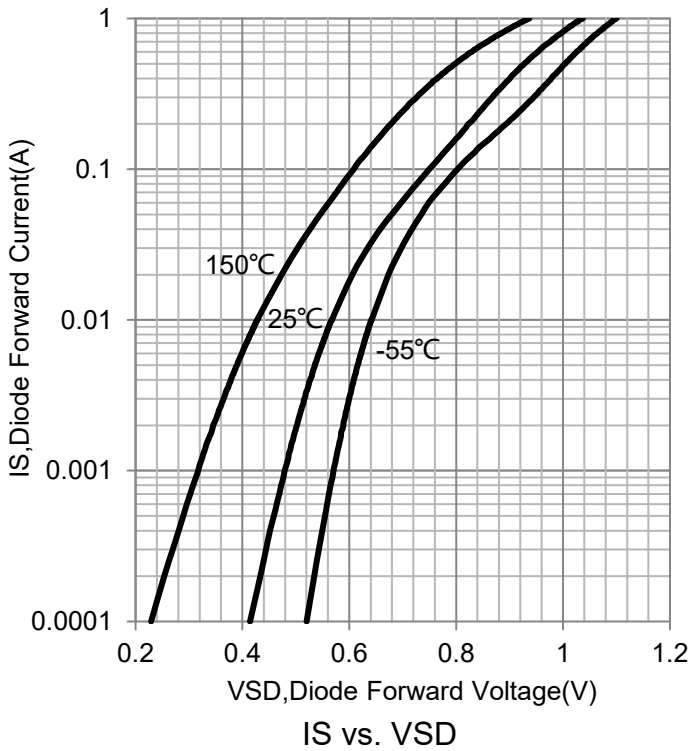
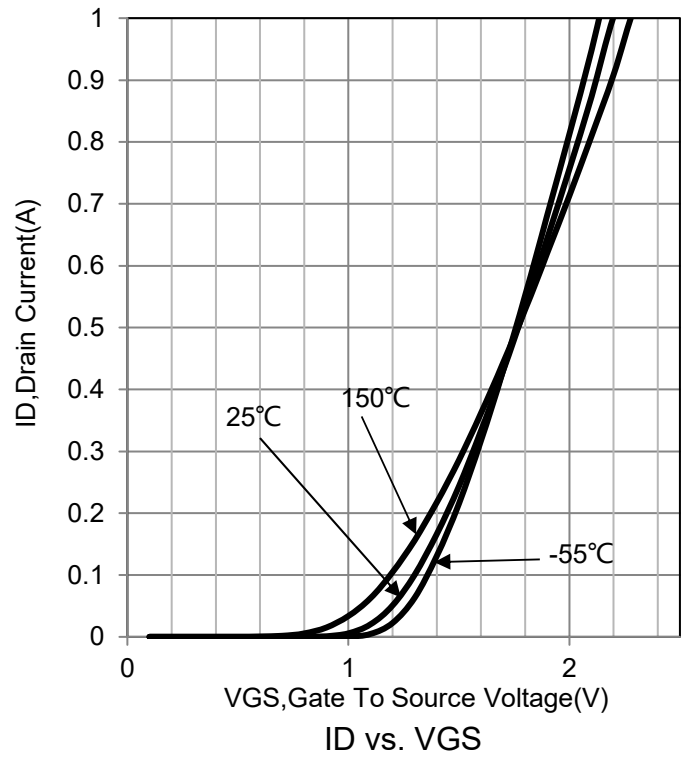
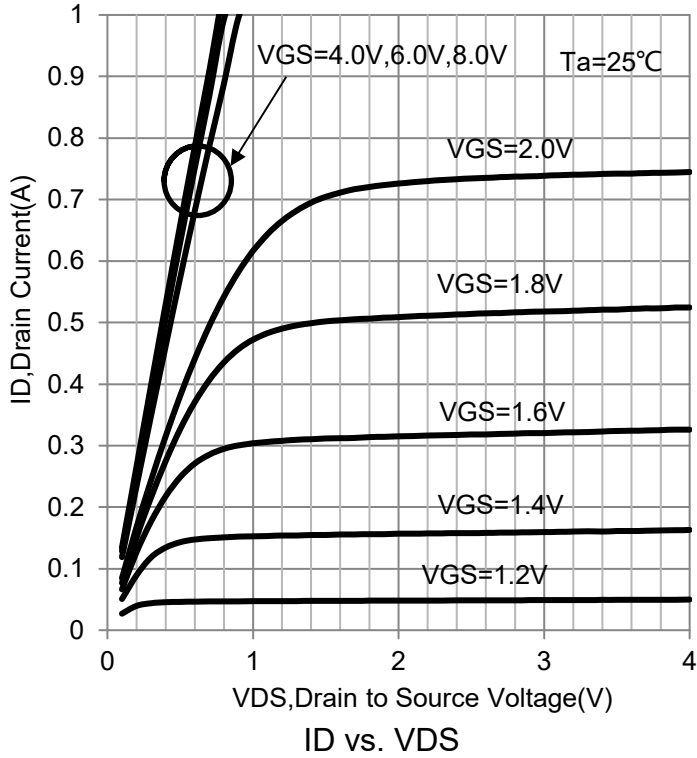
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0 V , ID = -250μA)	V(BR)DSS	-20	-	-	V
Gate Threshold Voltage (VDS =VGS , ID = -250μA)	VGS(th)	-0.3	-	-1.0	V
Gate Leakage Current (VDS =0V, VGS =±5V) (VDS =0V, VGS =±8V)	IGSS	-	-	±1.0 ±5.0	μA
Zero Gate Voltage Drain Current (VDS = -20V, VGS =0V)	IDSS	-	-	-100	nA
Drain-Source On-Resistance (VGS = -5 V, ID = -100 mA) (VGS = -4.5 V, ID = -100 mA) (VGS = -2.5 V, ID = -80 mA) (VGS = -1.8 V, ID = -40 mA) (VGS = -1.5 V, ID = -30 mA) (VGS = -1.2 V, ID = -1 mA)	RDS(ON) (Note 3)	-	0.67 0.7 0.9 1.2 1.5 5	1.05 1.1 1.5 2 3	Ω
Forward Transconductance (Note 3) (VDS = -3 V, ID = -100 mA)	gfs	-	0.7	-	S
Diode Forward Voltage (Note 3) (IS = -500 mA, VGS = 0 V)	VSD	-	-	-1.3	V
Dynamic (Note 4)					
Total Gate Charge	(VDS = -10 V, ID = -250 mA)	Qg	-	0.5	nC
Gate-Source Charge		Qgs	-	0.09	
Gate-Drain Charge		Qgd	-	0.09	
Turn-On Delay Time	(VDD = -3 V, RL = 300Ω, ID = -100 mA, VGS = -2.5 V, RG = 25 Ω)	td(on)	-	8.5	ns
Rise Time		tr	-	4.3	
Turn-Off Delay Time		td(off)	-	20.2	
Fall Time		tf	-	19.2	
Input Capacitance	(VDS = 10V, VGS = 0 V, f = 1 MHz)	Ciss	-	46.1	pF
Output Capacitance		Coss	-	7.2	
Reverse Transfer Capacitance		Crss	-	4.9	

3. Pulse test; pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$.

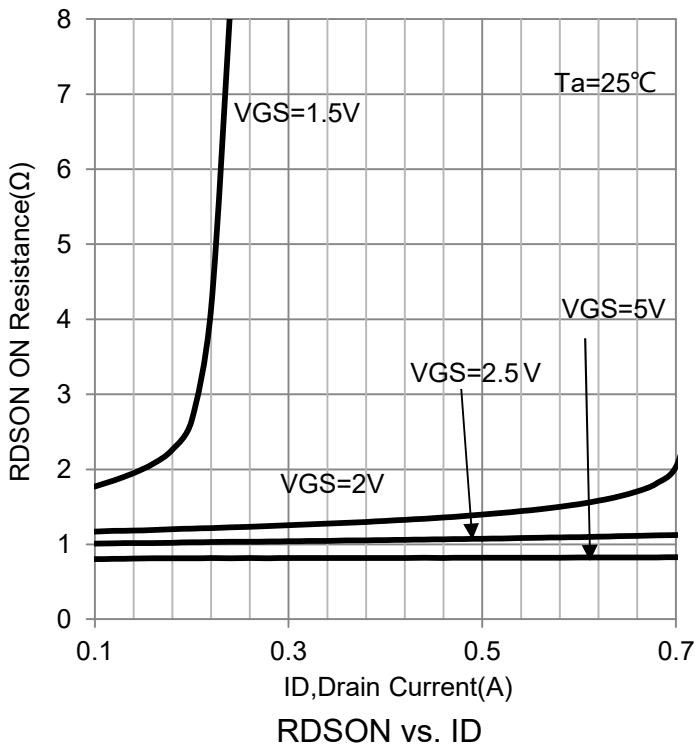
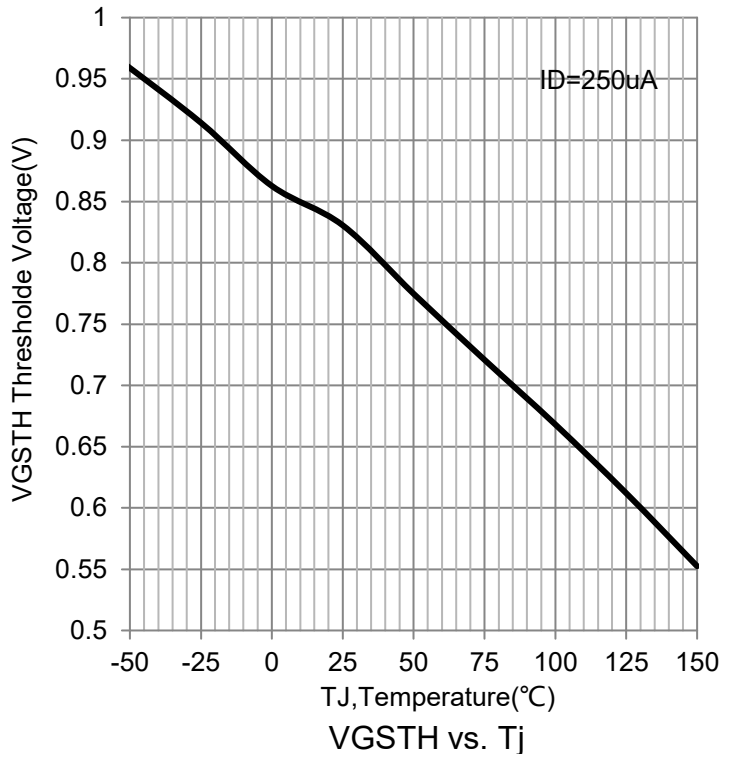
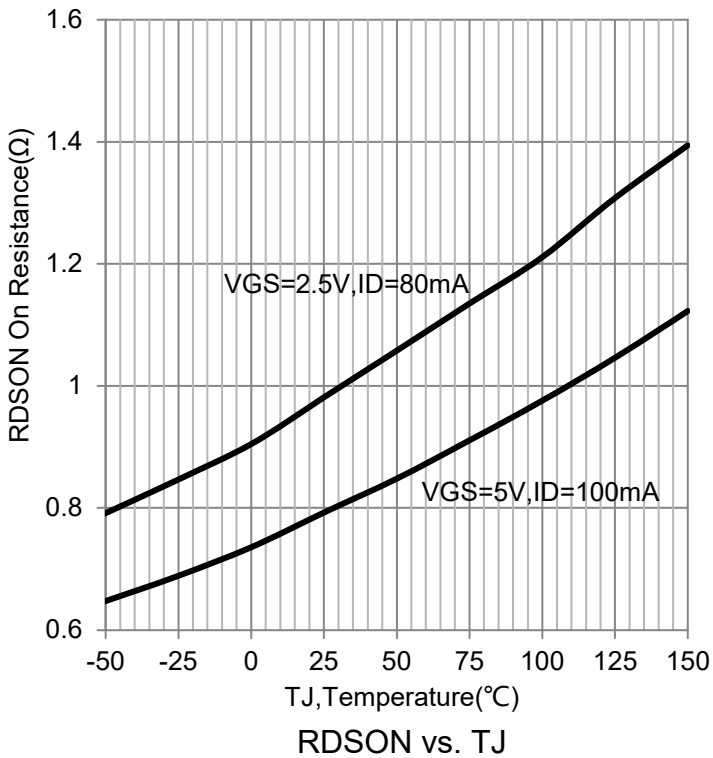
4. Guaranteed by design, not subject to production testing.



6.ELECTRICAL CHARACTERISTICS CURVES



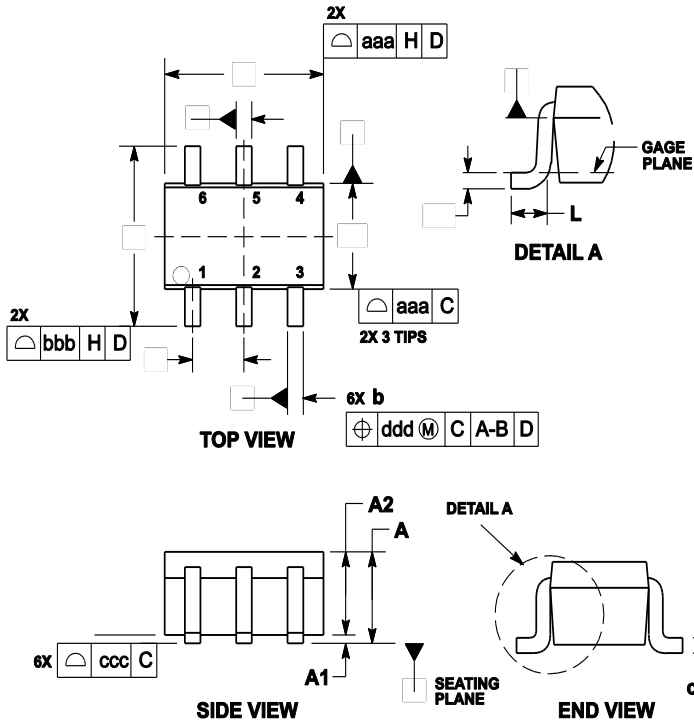
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



7. OUTLINE AND DIMENSIONS

Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	---	---	1.10	---	---	0.043
A1	0.00	---	0.10	0	---	0.004
A2	0.70	0.90	1.00	0.027	0.035	0.039
b	0.15	0.20	0.25	0.006	0.008	0.01
C	0.08	0.15	0.22	0.003	0.006	0.009
D	1.80	2.00	2.20	0.07	0.078	0.086
E	2.00	2.10	2.20	0.078	0.082	0.086
E1	1.15	1.25	1.35	0.045	0.049	0.053
e	0.65 BSC			0.026 BSC		
L	0.26	0.36	0.46	0.010	0.014	0.018
L2	0.15 BSC			0.006 BSC		
aaa	0.15			0.01		
bbb	0.30			0.01		
ccc	0.10			0.00		
ddd	0.10			0.00		

8. SOLDERING FOOTPRINT

