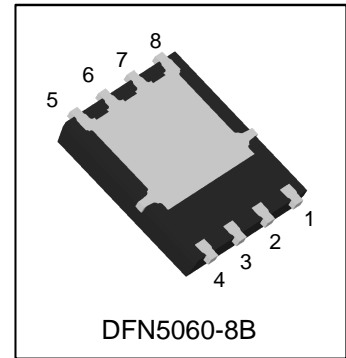


# S-LP7413DT3WG

40V P-Channel (D-S) MOSFET

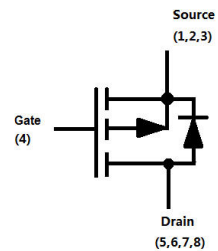


## 1. FEATURES

- Low RDS(on) trench technology
- Low thermal impedance
- Fast switching speed
- 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 Switches
- DC/DC Conversion
- Motor Drives



## 3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
S-LP7413DT3WG	LP7413	5000/Tape&Reel

## 4. MAXIMUM RATINGS(Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		VDS	-40	V
Gate-Source Voltage		VGS	±20	
Continuous Drain Current (Note1)	TA = 25°C	ID	-14	A
	TA = 70°C		-12	
	TC = 25°C		-47	
	TC = 70°C		-38	
Pulsed Drain Current (Note 2)		IDM	-56	
Avalanche Current(L=0.1mH)		IAS		A
Avalanche energy(L=0.1mH)		EAS		mJ
Power Dissipation (Note1)	TA = 25°C	PD	2.5	W
	TC = 25°C		41	
Operating Junction and Storage Temperature Range		TJ,Tstg	-55~+150	°C

## 5. THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Thermal Resistance,Junction-to-Ambient(Note 1)	RθJA	50	°C/W
Thermal Resistance,Junction-to-Case	RθJC	3	

1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu.

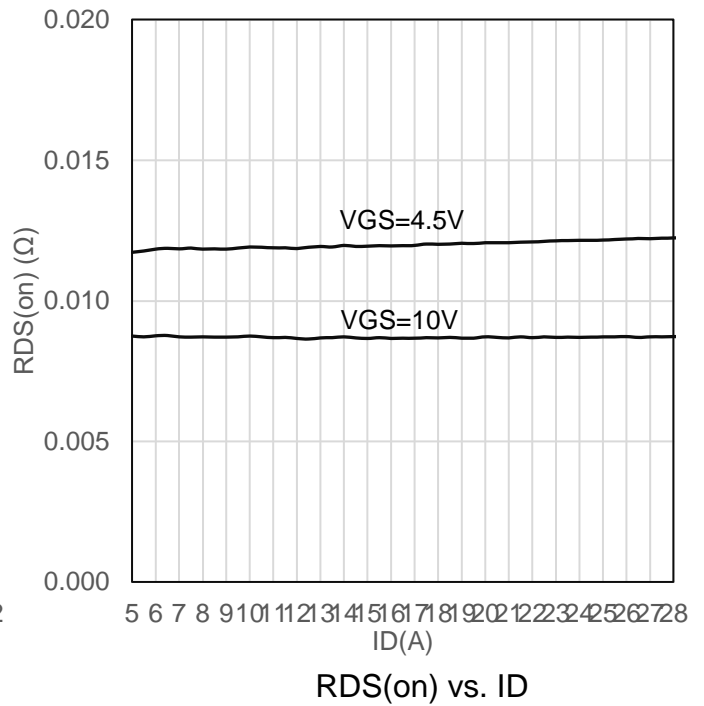
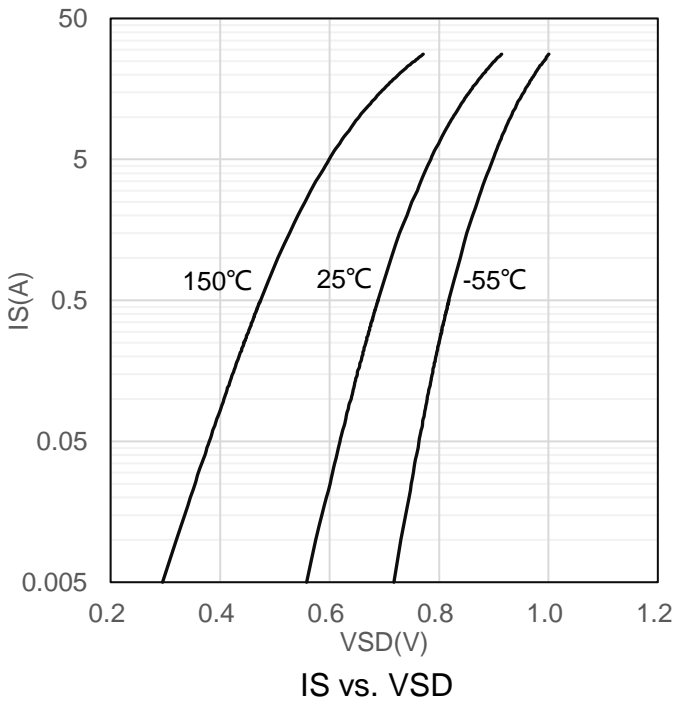
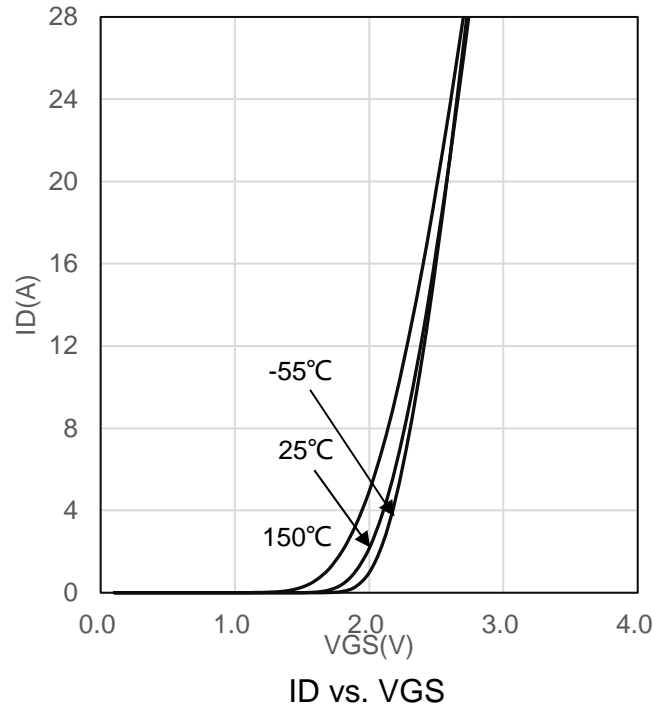
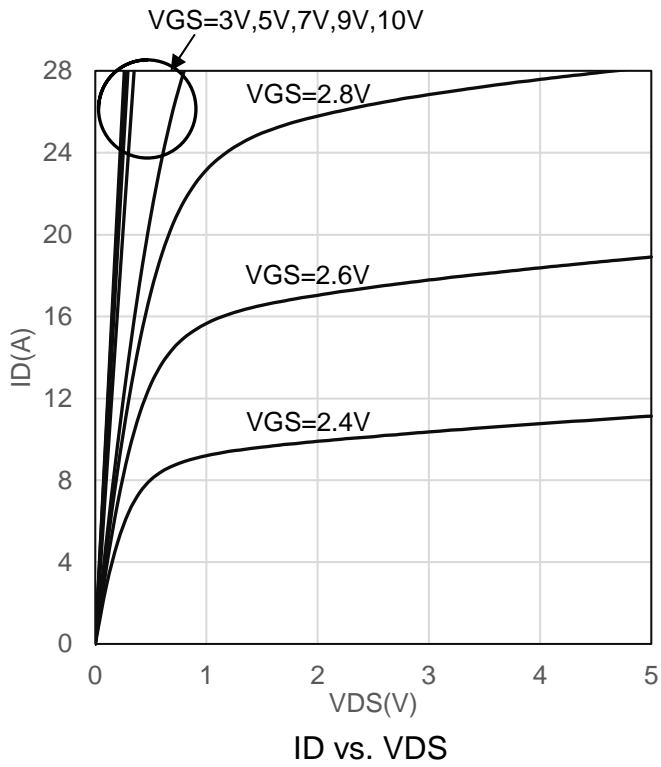
2.Pulse width limited by maximum junction temperature

## 6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

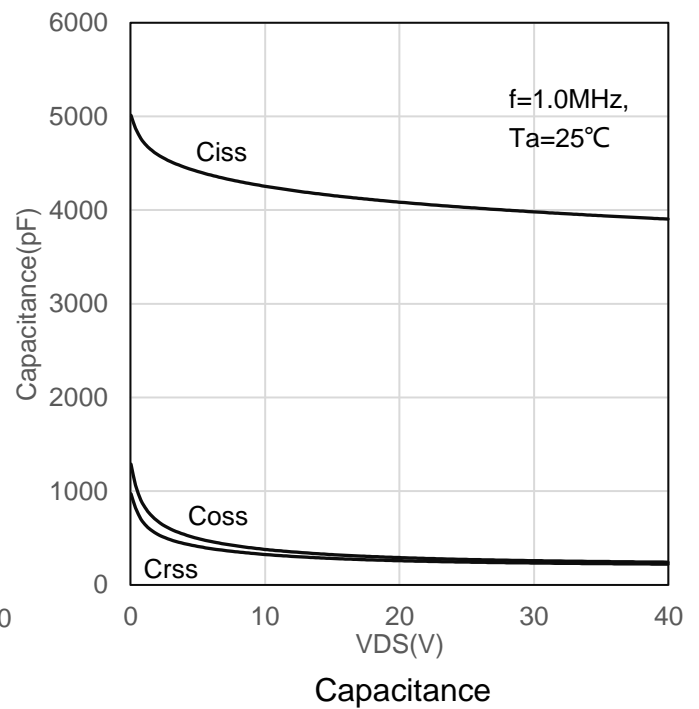
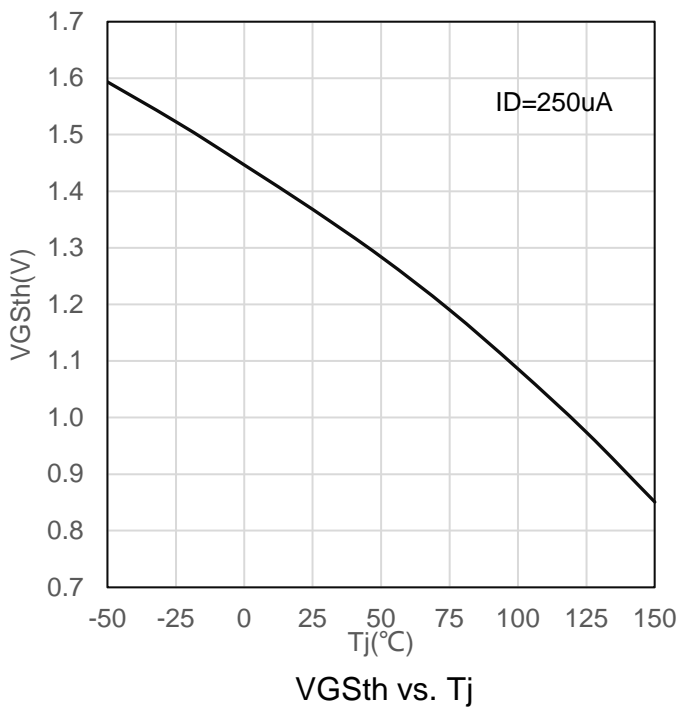
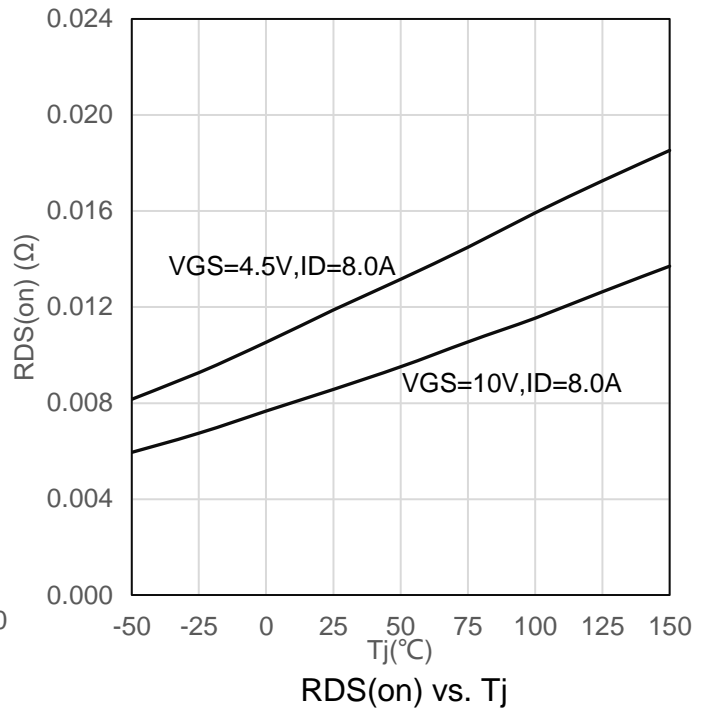
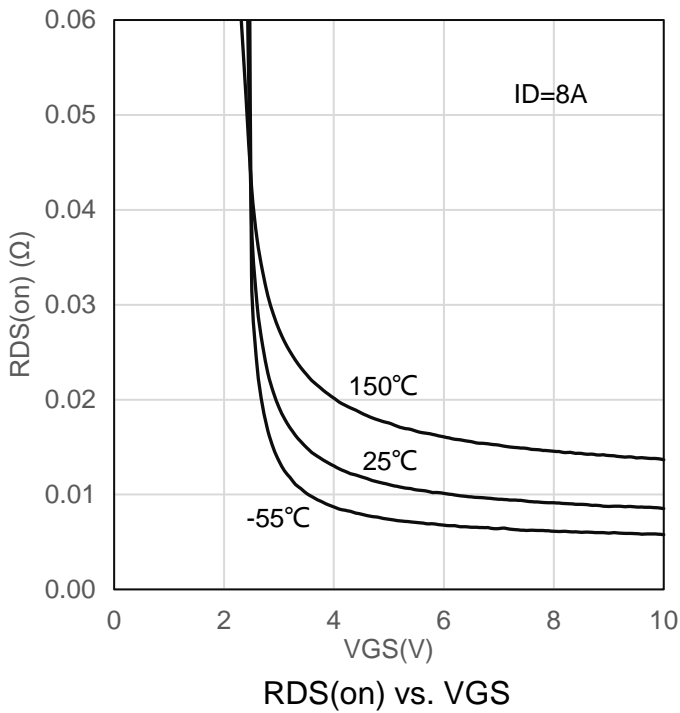
Characteristic	Symbol	Min.	Typ.	Max.	Unit
<b>Static</b>					
Drain–Source Breakdown Voltage (VGS = 0 V, ID = -250 μA)	VBRDSS	-40	-	-	V
Gate Threshold Voltage (VDS = VGS, ID = -250 μA)	VGS(th)	-1	-	-3	V
Gate Leakage Current (VDS = 0 V, VGS = ±20 V)	IGSS	-	-	±100	nA
Zero Gate Voltage Drain Current (VDS = -32 V, VGS = 0 V)	IDSS	-	-	-1	μA
Drain-Source On-Resistance(Note 3) (VGS = -10 V, ID = -8 A) (VGS = -4.5 V, ID = -8 A)	RDS(ON)	-	-	12 18	mΩ
Diode Forward Voltage (Note 3) (IS = -1 A, VGS = 0 V)	VSD	-	-0.8	-1.2	V
<b>Dynamic</b>					
Total Gate Charge	(VDS= -15 V, VGS = -5 V, ID= -1 A)	Qg	-	50	nC
Gate-Source Charge		Qgs	-	10	
Gate-Drain Charge		Qgd	-	10	
Turn-On Delay Time	(VDS = -15 V, RL = 6 Ω, ID= -1 A ,VGEN = -10 V)	td(on)	-	9	ns
Rise Time		tr	-	10	
Turn-Off Delay Time		td(off)	-	100	
Fall Time		tf	-	40	
Input Capacitance	(VDS = -20 V, VGS = 0 V, f = 1 MHz)	Ciss	-	3974	pF
Output Capacitance		Coss	-	292	
Reverse Transfer Capacitance		Crss	-	244	

3.Pulse test: PW ≤ 300us duty cycle ≤ 2%.

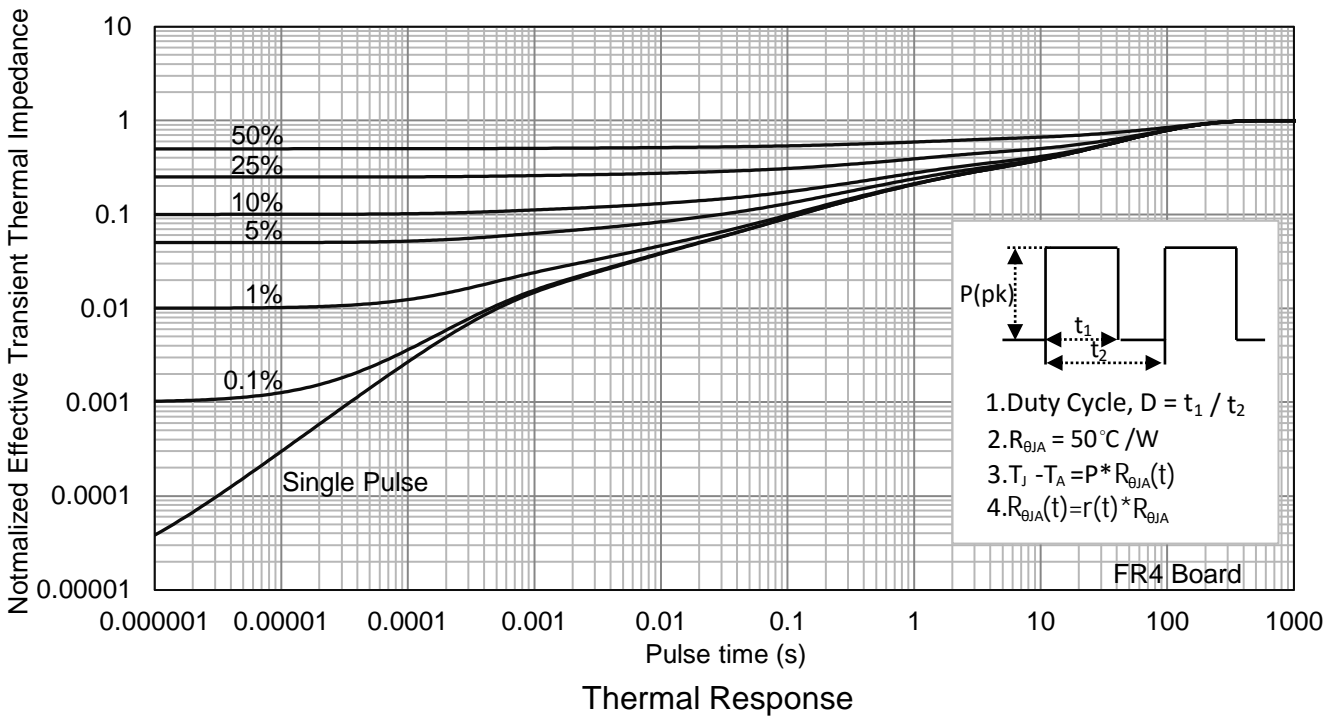
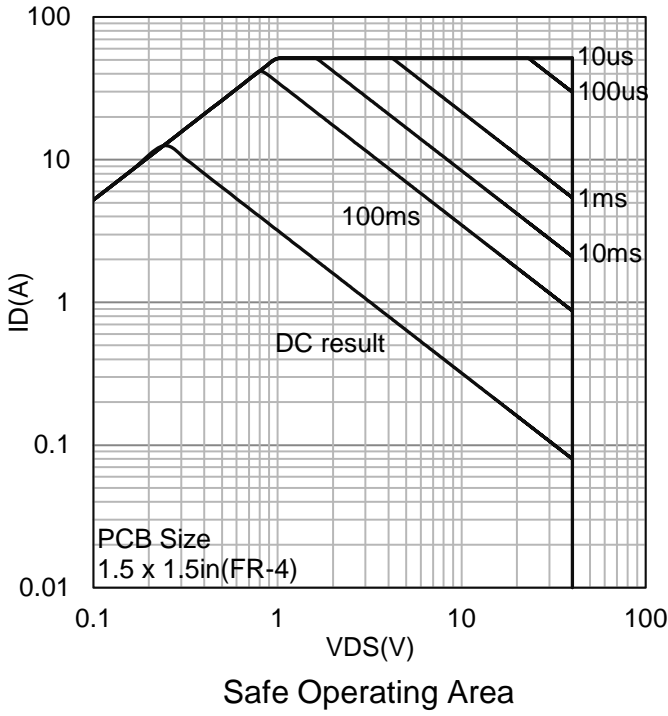
### 7. ELECTRICAL CHARACTERISTICS CURVES



**7. ELECTRICAL CHARACTERISTICS CURVES(Con.)**



**7. ELECTRICAL CHARACTERISTICS CURVES(Con.)**





## **DISCLAIMER**

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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