

P9435L

S-P9435L

30V P-Channel Enhancement-Mode MOSFET

1. FEATURES

- $V_{DS} = -30V$
- $R_{DS(ON)}, V_{GS@-10V}, I_{DS@-5.3A} = 70m\Omega$
- $R_{DS(ON)}, V_{GS@-4.5V}, I_{DS@-4.2A} = 100m\Omega$
- 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

- Advanced trench process technology
- High density cell design for ultra low on-resistance.

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
P9435L	P94	3000/Tape&Reel

4. MAXIMUM RATINGS($T_a = 25^\circ C$)

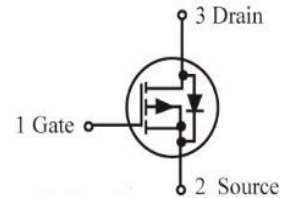
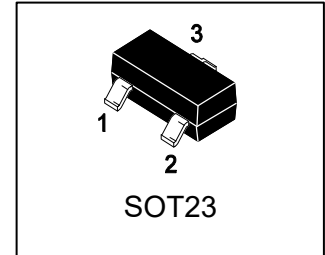
Parameter	Symbol	Limits	Unit
Drain–Source Voltage	V_{DSS}	-30	V
Gate–to–Source Voltage – Continuous	V_{GS}	± 20	V
Drain Current			A
– Continuous $T_A = 25^\circ C$	ID	-5.3	
– Pulsed (Note 1)	IDM	-20	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Power Dissipation	PD	1.4	W
Thermal Resistance, Junction–to–Ambient(Note 2)	$R_{\theta JA}$	90	$^\circ C/W$
Junction and Storage temperature	T_J, T_{stg}	$-55 \sim +150$	$^\circ C$

1.Repetitive Rating: Pulse width limited by the maximum junction temperature

2.1-in² 2oz Cu PCB board.



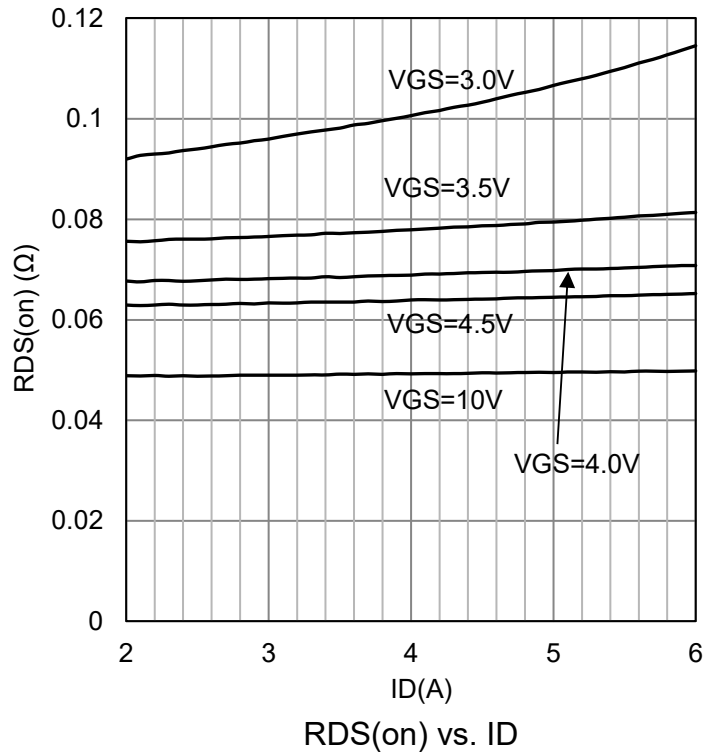
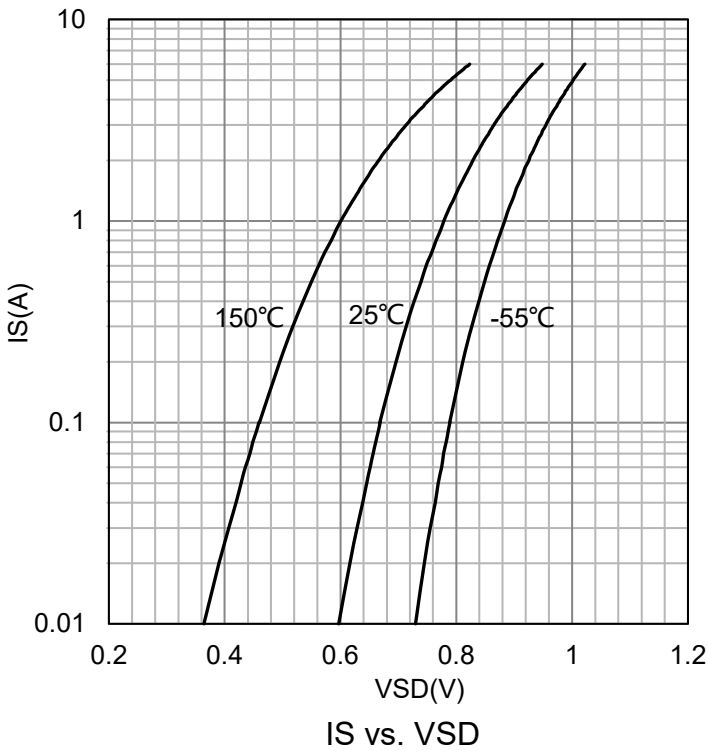
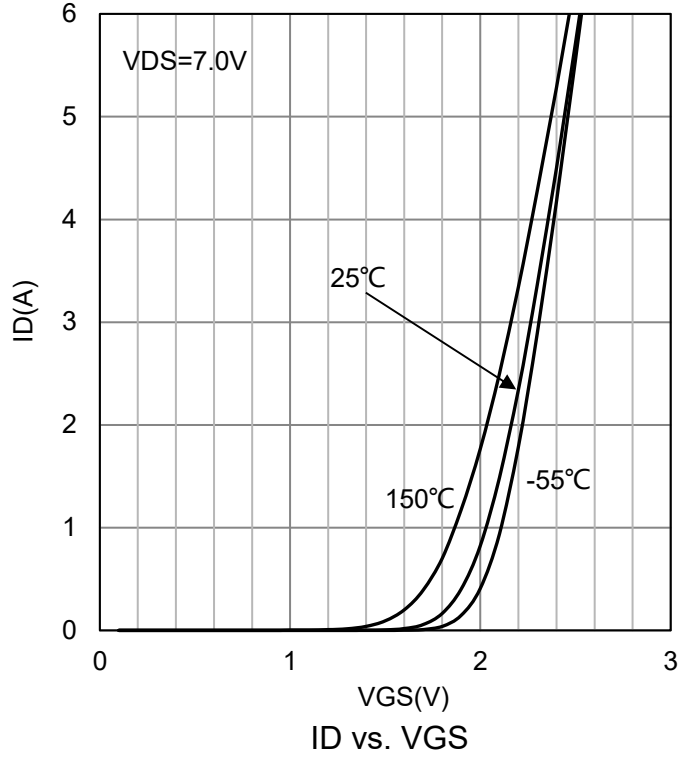
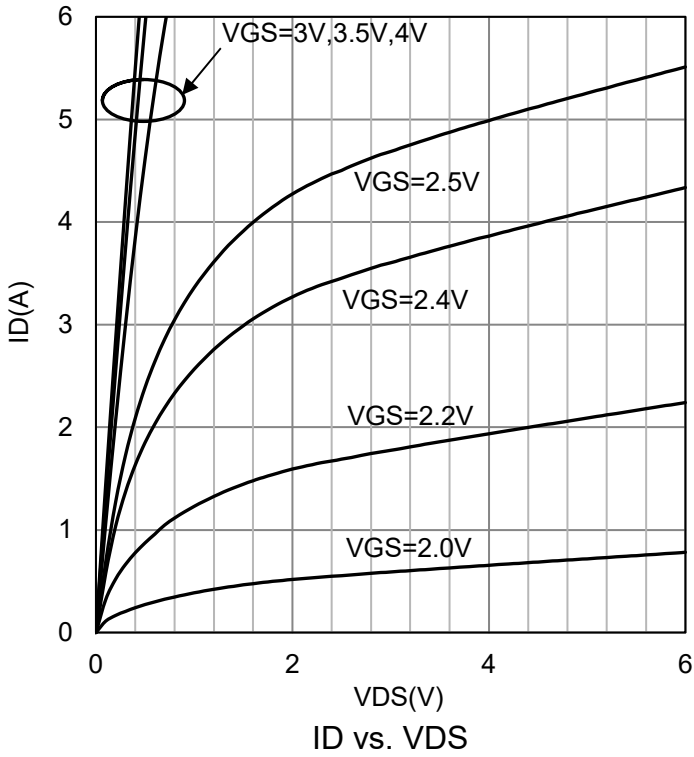
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Static						
Drain–Source Breakdown Voltage (VGS = 0, ID = -250μA)	VBRDSS	-30	-	-	V	
Zero Gate Voltage Drain Current (VGS = 0, VDS = -24V)	IDSS	-	-	-1	μA	
Gate–Body Leakage Current, Forward (VGS = 20V)	IGSSF	-	-	100	nA	
Gate–Body Leakage Current, Reverse (VGS = - 20V)	IGSSR	-	-	-100	nA	
Gate Threshold Voltage (VDS = VGS, ID = -250μA)	VGS(th)	-1	-1.7	-3	V	
Static Drain–Source On–State Resistance(Note 3) (VGS = -10V, ID = -5.3A) (VGS = -4.5V, ID = -4.2A)	RDS(on)	-	50 70	70 100	mΩ	
Forward Voltage (VGS = 0V, ISD = -2.6A)	VSD	-	-	-1.3	V	
Dynamic						
Input Capacitance (VGS = 0V, f = 1.0MHz,VDS= -15V)	Ciss	-	644	-	pF	
Output Capacitance (VGS = 0V, f = 1.0MHz,VDS= -15V)	Coss	-	65	-	pF	
Reverse Transfer Capacitance (VGS = 0V, f = 1.0MHz,VDS= -15V)	Crss	-	51	-	pF	
Turn-On Delay Time	(VDD = -15V, RL = 15Ω ID = -1A, VGEN = -10V RG = 6.2Ω)	td(on)	-	3.6	-	ns
Rise Time		tr	-	4.2	-	
Turn-Off Delay Time		td(off)	-	22	-	
Fall Time		tf	-	6.3	-	
Total Gate Charge	(VDS = -15V, VGS = -10V, ID = -5.3A)	Qg	-	10	-	nC
Gate-Source Charge		Qgs	-	1.6	-	
Gate-Drain Charge		Qgd	-	1.8	-	

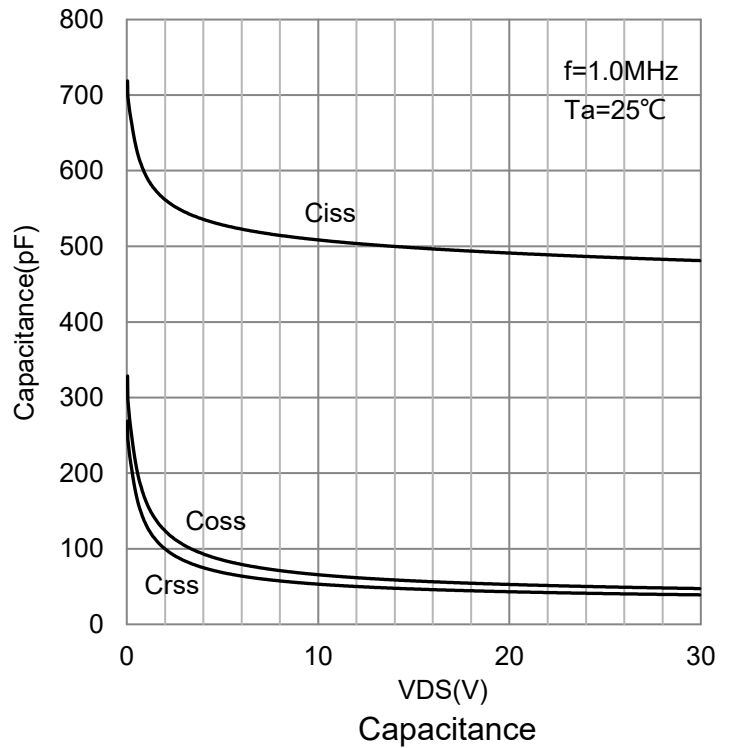
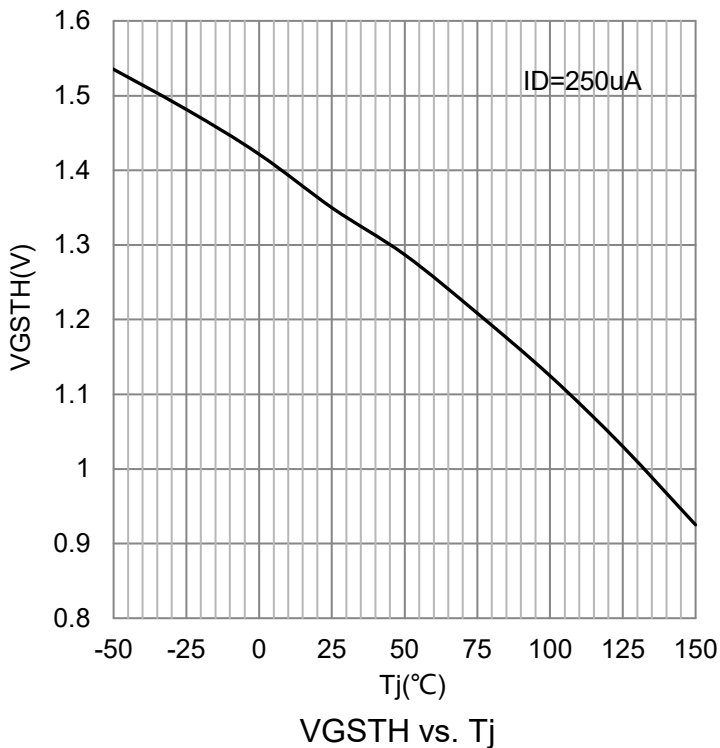
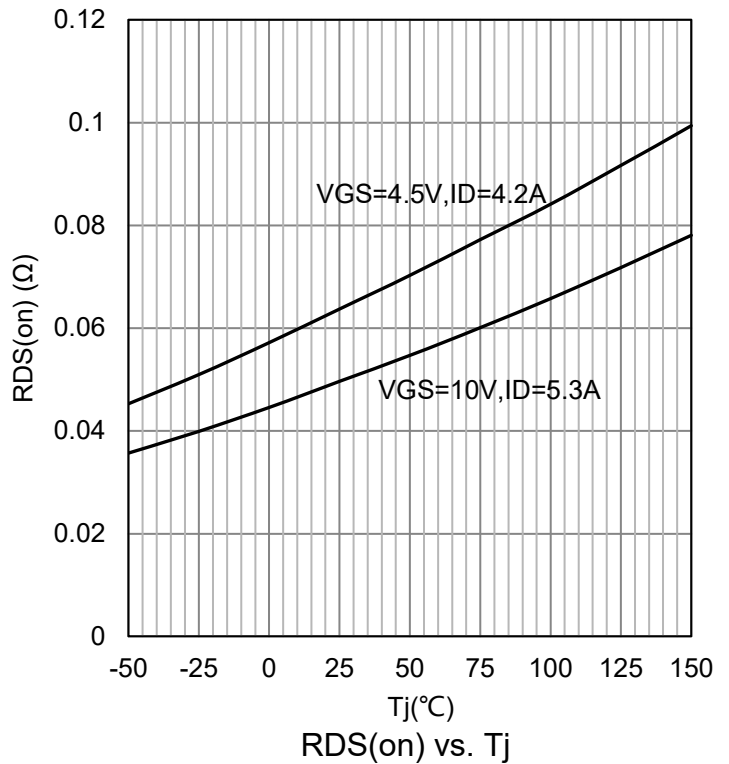
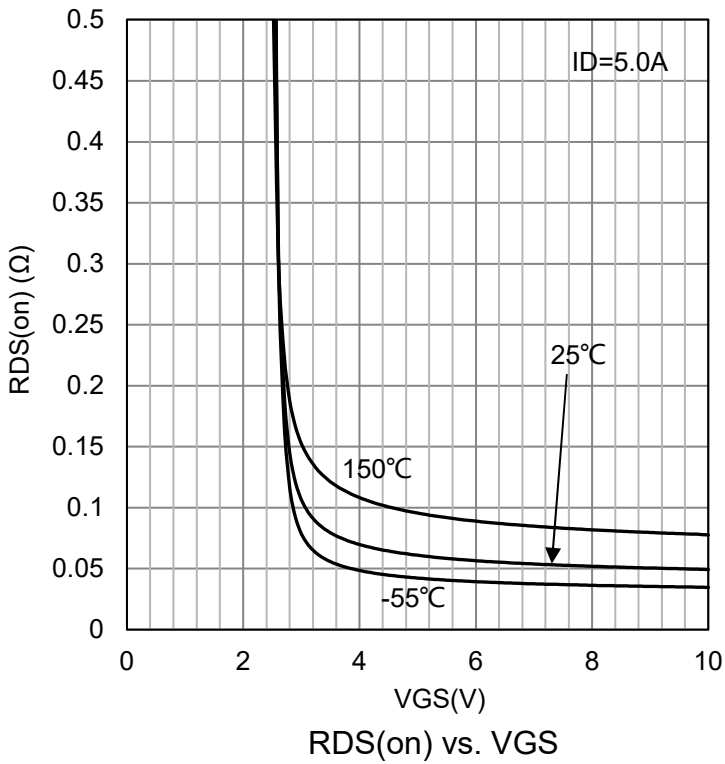
3.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.



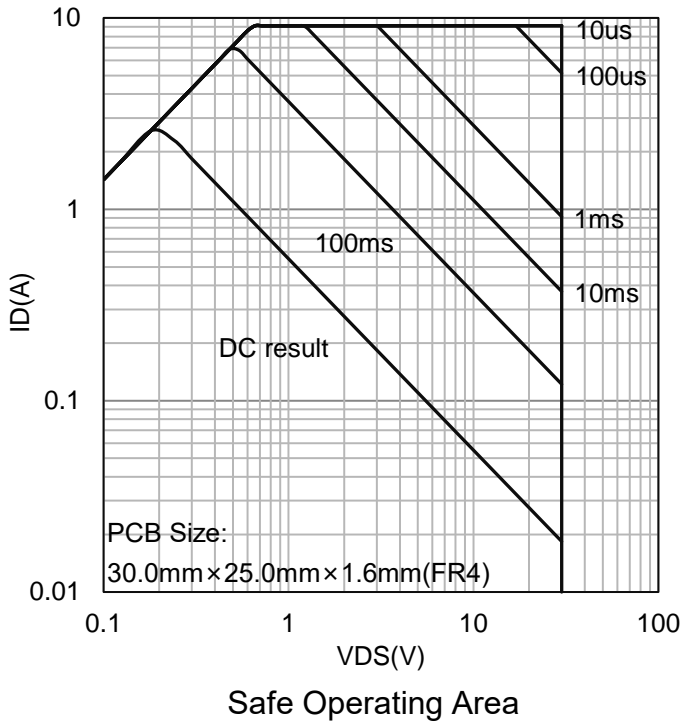
7. ELECTRICAL CHARACTERISTICS CURVES



7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



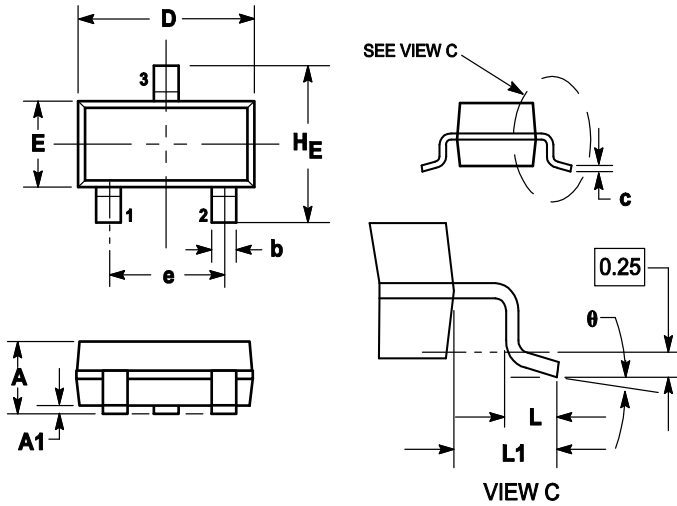
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



8. 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	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

9. SOLDERING FOOTPRINT
