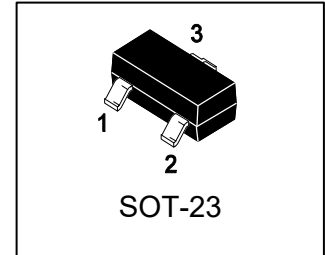


P3401L

30V P-Channel Enhancement-Mode MOSFET

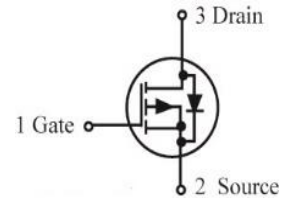
1. FEATURES

- $V_{DS} = -30V$
- $R_{DS(ON)} \leq 70m\Omega$ ($V_{GS} = -10V$)
- $R_{DS(ON)} \leq 80m\Omega$ ($V_{GS} = -4.5V$)
- $R_{DS(ON)} \leq 120m\Omega$ ($V_{GS} = -2.5V$)
- We declare that the material of product compliance with RoHS requirements and Halogen Free.



2. APPLICATIONS

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



3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
P3401L	A1	3000/Tape&Reel

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

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-to-Source Voltage – Continuous	V_{GS}	± 12	V
Drain Current			A
– Continuous $T_A = 25^\circ C$ (Note 1)	I_D	-4.2	
– Pulsed (Note 2)	I_{DM}	-30	

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Power Dissipation(Note 1)	PD	1.4	W
Thermal Resistance, Junction-to-Ambient(Note 1)	$R_{\theta JA}$	125	$^\circ C/W$
Junction-to-Case	$R_{\theta JC}$	100	
Junction and Storage temperature	T_J, T_{stg}	$-55 \sim +150$	$^\circ C$

- 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



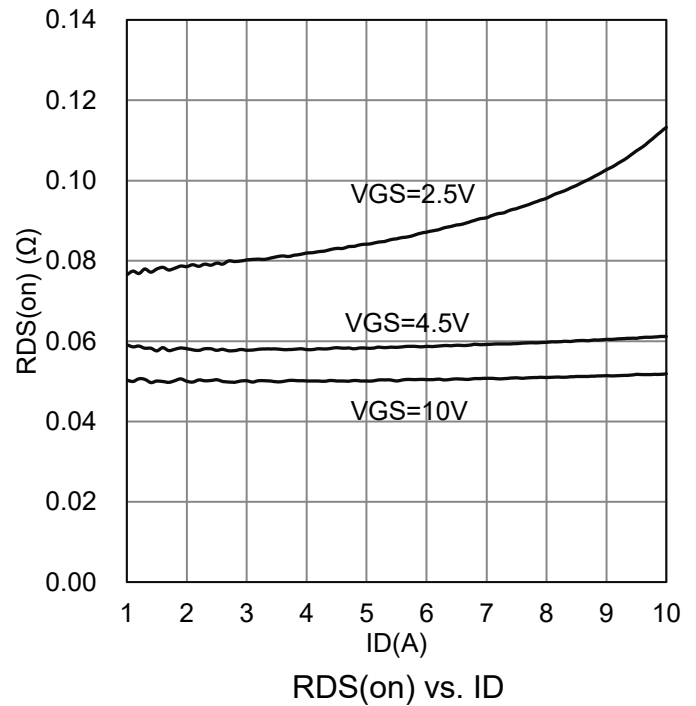
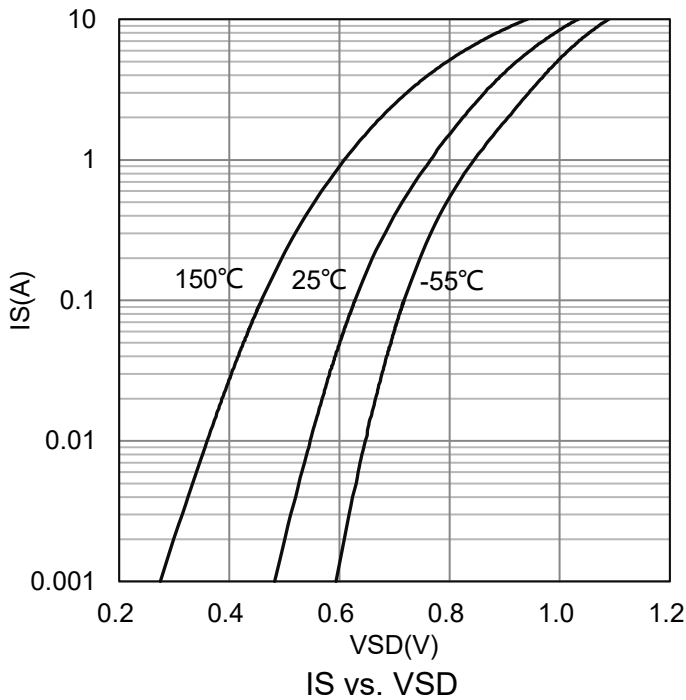
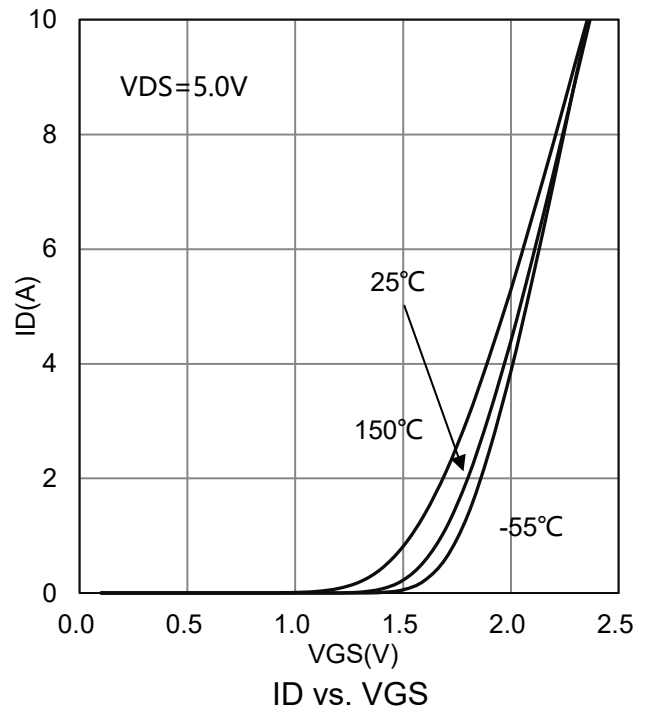
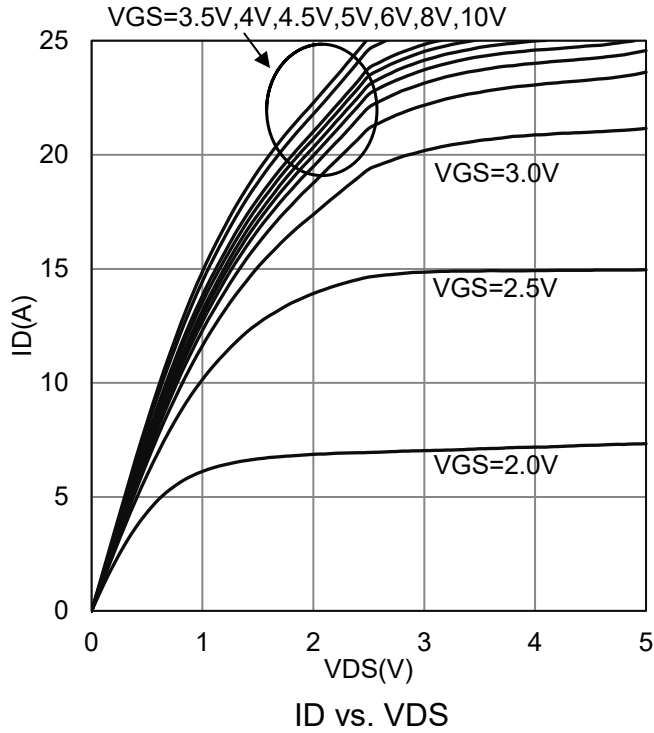
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

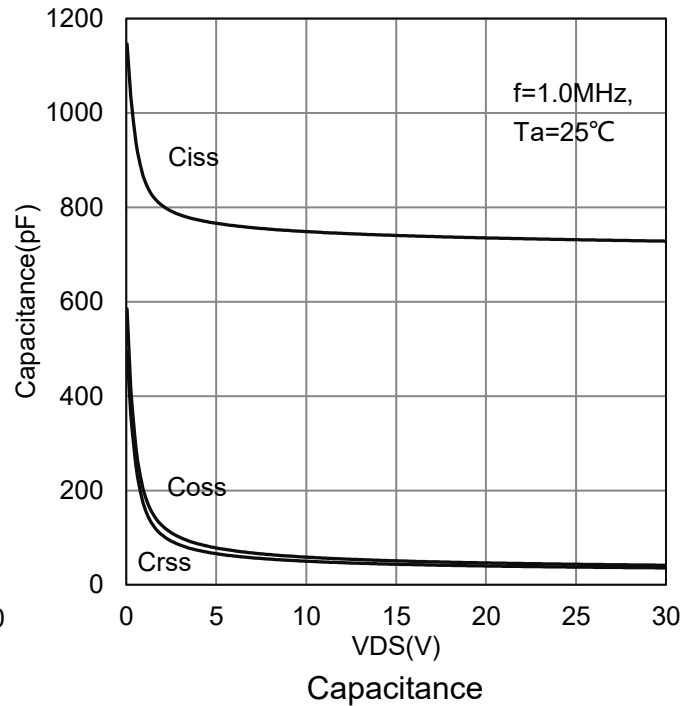
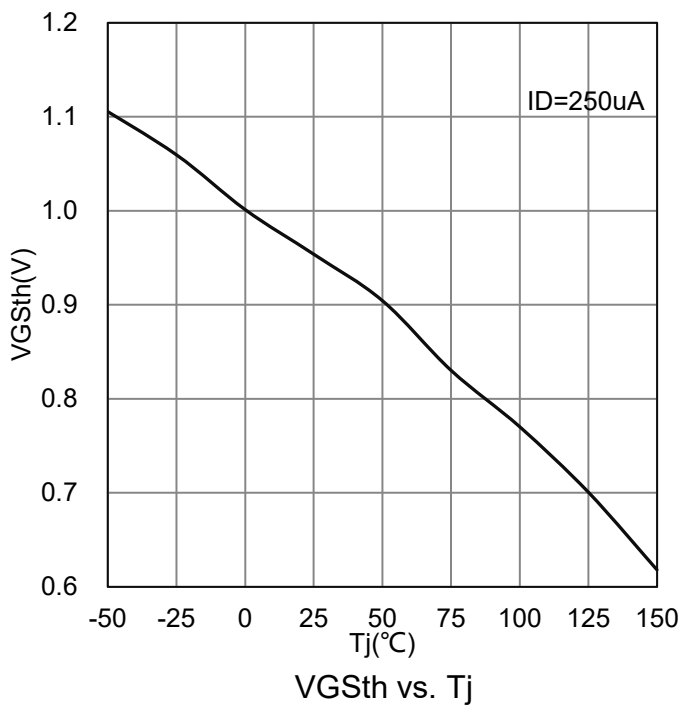
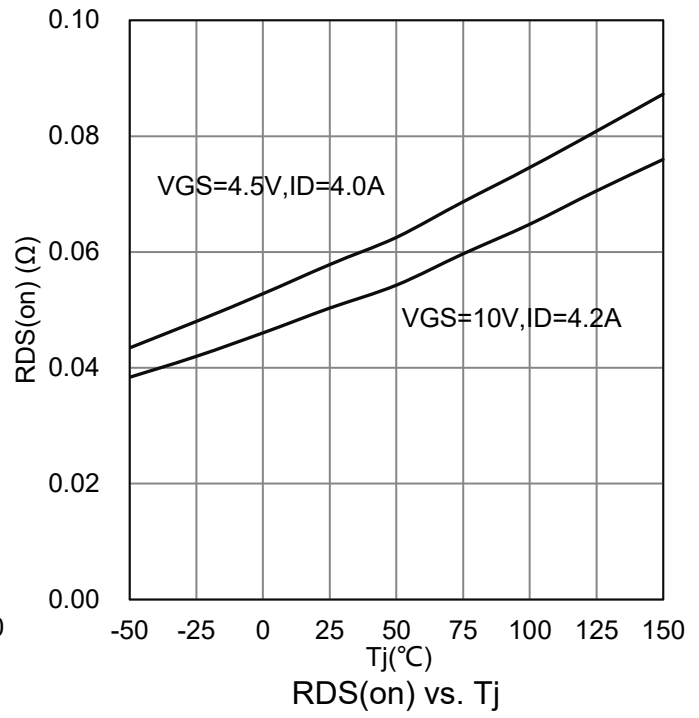
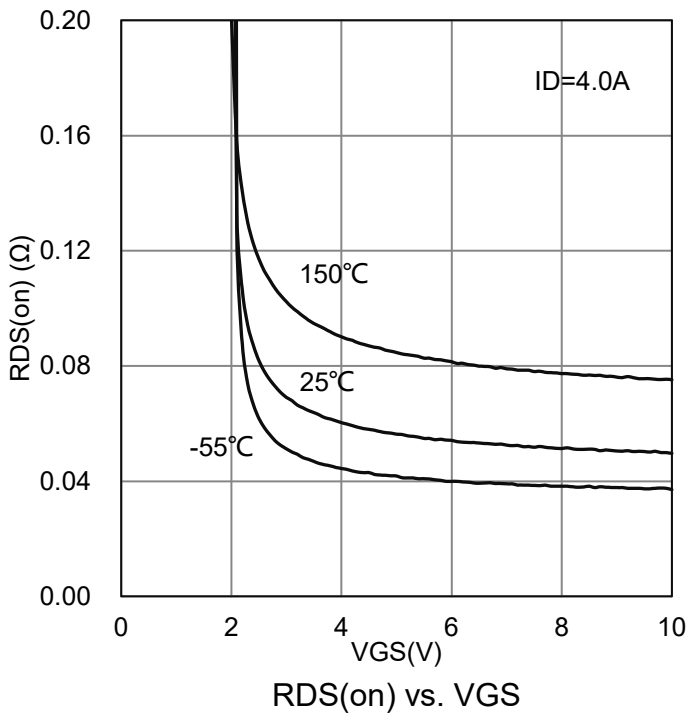
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
STATIC						
Drain-Source Breakdown Voltage (VGS = 0, ID = -250μA)	VBRDSS	-30	-	-	V	
Gate-Source Threshold Voltage (VDS =VGS , ID =-250μA)	VGS(th)	-0.6	-1.0	-1.3	V	
Gate-Body Leakage Current (VDS =0V, VGS =± 12V)	IGSS	-	-	±100	nA	
Zero Gate Voltage Drain Current (VDS = -24 V, VGS = 0 V)	IDSS	-	-	-1	μA	
Drain-Source On-Resistance(Note 3) (VGS = -10 V, ID = -4.2 A) (VGS = -4.5 V, ID = -4 A) (VGS = -2.5 V, ID = -1 A)	RDS(ON)	-	-	70 80 120	mΩ	
Diode Forward Voltage(Note 3) (IS = -1 A, VGS = 0 V)	VSD	-	-0.75	-1.3	V	
DYNAMIC						
Total Gate Charge	(VDS = -15 V, VGS = -4.5 V, ID = -4 A)	Qg	-	7.4	-	nC
Gate-Source Charge		Qgs	-	1.3	-	
Gate-Drain Charge		Qgd	-	2.6	-	
Turn-On Delay Time	(VDS = -15 V, RL = 3.6 Ω, VGS= -10V, RGEN =6.2 Ω)	td(on)	-	2.6	-	ns
Rise Time		tr	-	10	-	
Turn-Off Delay Time		td(off)	-	52	-	
Fall Time		tf	-	16.2	-	
Input Capacitance	(VDS = -15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	740	-	pF
Output Capacitance		Coss	-	51	-	
Reverse Transfer Capacitance		Crss	-	44	-	
Gate Resistance (VDS=0V ,VGS=0V, f=1.0MHz)		Rg	-	8.5	-	Ω

3.Pulse test; pulse width≤300μs, duty cycle≤ 2%

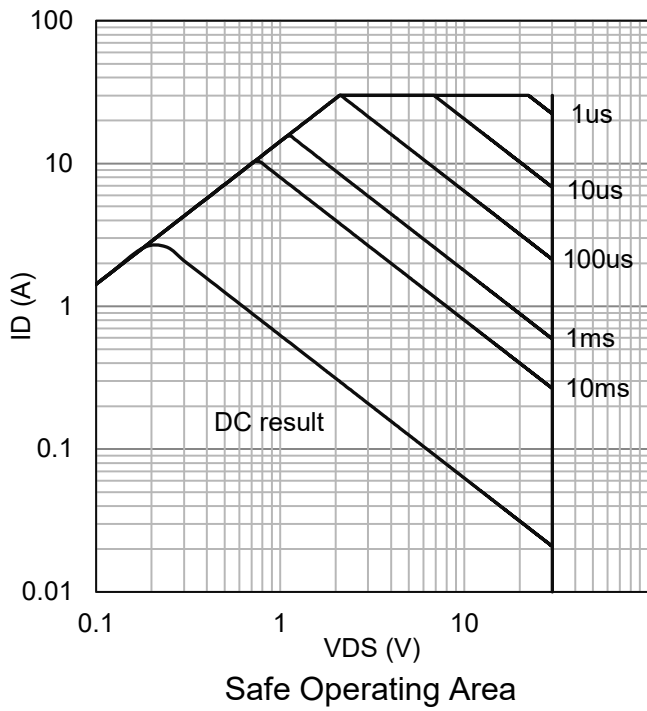


7. ELECTRICAL CHARACTERISTICS CURVES



7. ELECTRICAL CHARACTERISTICS CURVES(Con.)


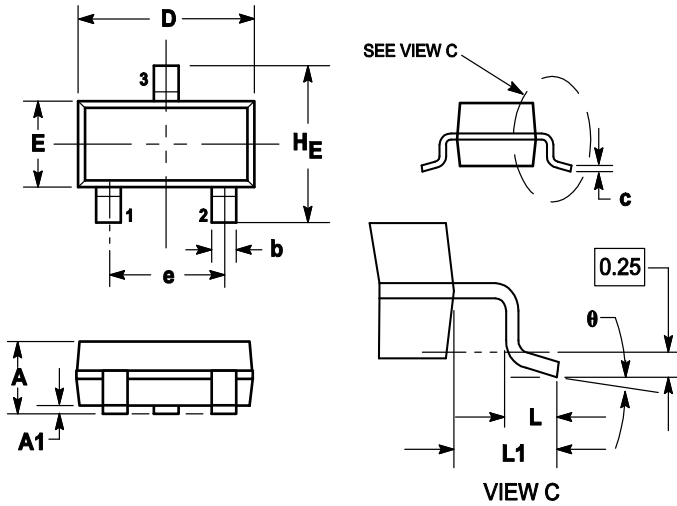
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



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
