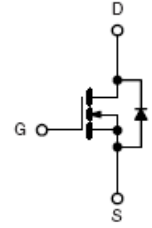




MT3400 Plastic-Encapsulate MOSFETS

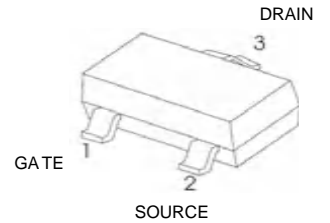
N-Channel Enhancement Mode Field Effect Transistor



FEATURE

- High dense cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

MARKING: R0



SOT23-3L

Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	5.8	A
Drain Current-Pulsed (note 1)	I_{DM}	30	A
Power Dissipation	P_D	350	mW
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	357	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}\text{C}$



Electrical characteristics (T_a=25°C unless otherwise noted)

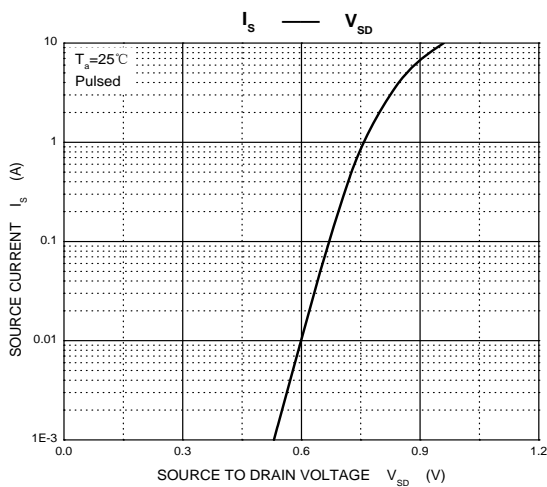
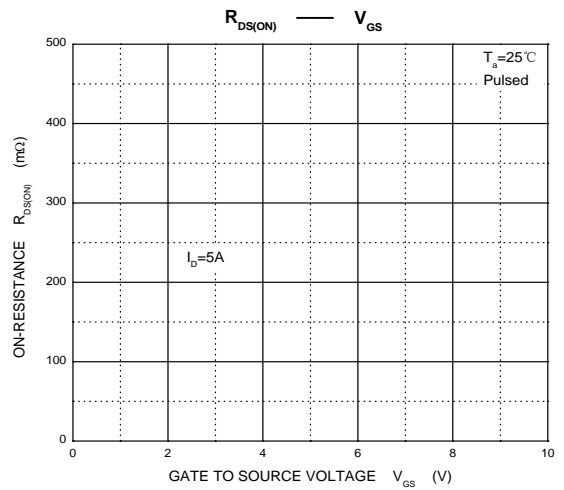
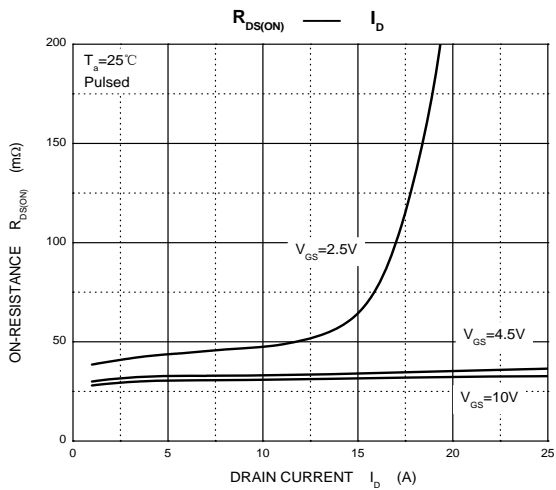
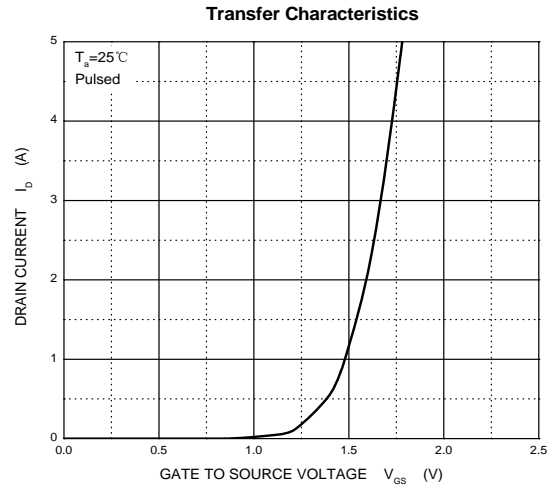
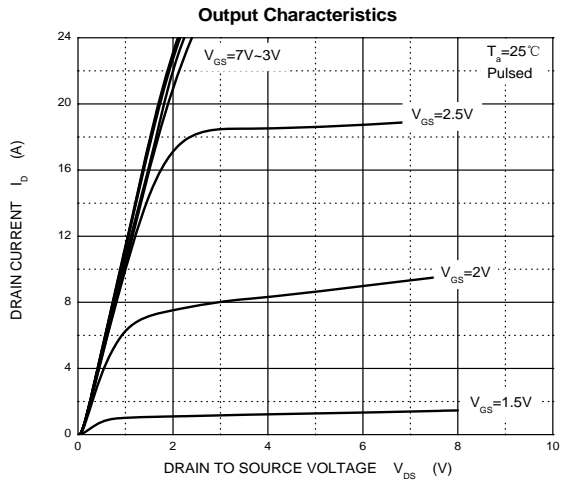
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30			V
Zero gate voltage drain current	I _{BSS}	V _{DS} = 24V, V _{GS} = 0V			1	μA
Gate-source leakage current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±100	nA
On characteristics						
Drain-source on-resistance (note 3)	R _{DS(on)}	V _{GS} = 10V, I _D = 5.8A			35	mΩ
		V _{GS} = 4.5V, I _D = 5A			40	mΩ
Forward tranconductance	g _{FS}	V _{DS} = 5V, I _D = 5A	8			S
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.7		1.4	V
Dynamic Characteristics (note 4,5)						
Input capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz			1050	pF
Output capacitance	C _{oss}				99	pF
Reverse transfer capacitance	C _{rss}				77	pF
Gate resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz			3.6	Ω
Switching Characteristics (note 4,5)						
Turn-on delay time	t _{d(on)}	V _{GS} = 10V, V _{DS} = 15V, R _L = 2.7Ω, R _{GEN} = 3Ω			5	ns
Turn-on rise time	t _r				7	ns
Turn-off delay time	t _{d(off)}				40	ns
Turn-off fall time	t _f				6	ns
Drain-source diode characteristics and maximum ratings						
Diode forward voltage (note 3)	V _{SD}	I _S = 1A, V _{GS} = 0V			1	V

Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

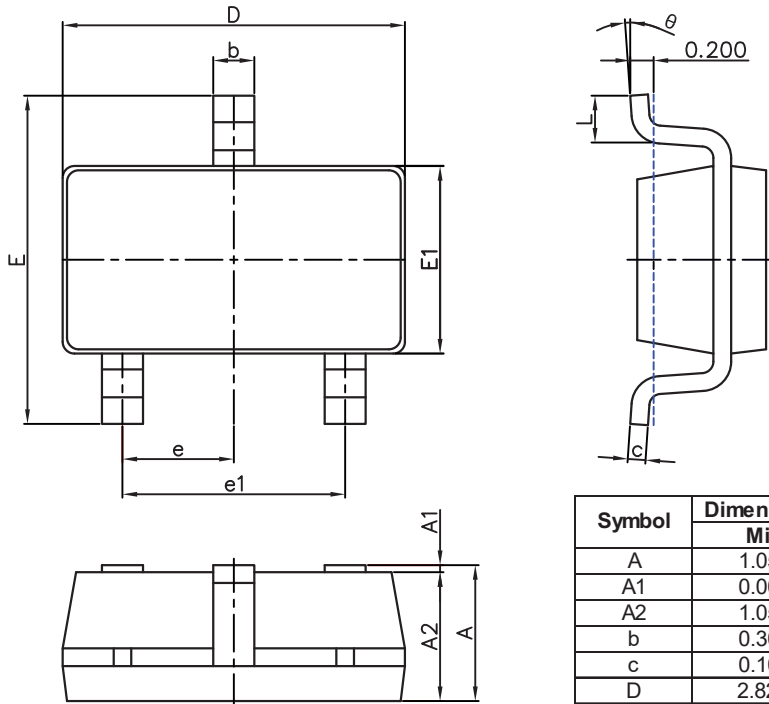


Typical Characteristics



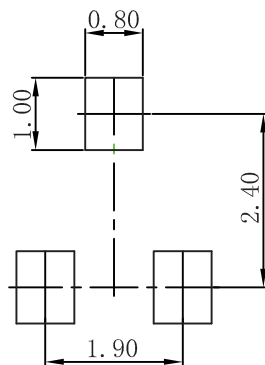


SOT23-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
K	0°	8°	0°	8°

SOT23-3L Suggested Pad Lay out



Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.