Absolute Maximum Ratings

Drain-to-Source Voltage ..... –6V
Gate-to-Source Voltage ..... –6V
Continuous Drain Current
T_A = 25°C (V_{GS} = 4.5V) 1.8A
T_A = 100°C (V_{GS} = 4.5V) 1.2A
Total Power Dissipation
T_A = 25°C 568mW
T_A = 100°C 227mW
Operating Junction Temperature ..... –40°C to +150°C
Storage Temperature ..... –55°C to +150°C
ESD Rating, **Note 2**

Operating Ratings

Thermal Resistance
θ_{JA} ..... 220°C/W
θ_{JC} ..... 130°C/W

Electrical Characteristics (Note 1)

Symbol	Parameter	Condition (Note 1)	Min	Typ	Max	Units
V_{GS}	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = –250µA	0.5		1.2	V
I_{GSS}	Gate-Body Leakage	V_{DS} = 0V, V_{GS} = –4.5V, **Note 2**, **Note 3**			1	µA
R_{GS}	Gate-Source Resistance	V_{DS} = 0V, V_{GS} = –4.5V, **Note 2**, **Note 4**	200	350	500	kΩ
C_{ISS}	Input Capacitance	V_{GS} = 0V, V_{DS} = –5.5V		600		pF
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = –5.5V, V_{GS} = 0V			1	µA
		V_{DS} = –5.5V, V_{GS} = 0V, T_J = 85°C			5	µA
$R_{DS(ON)}$	Drain-Source On-Resistance	V_{GS} = –4.5V, I_D = –100mA		0.125	0.160	Ω
		V_{GS} = –3.6V, I_D = –100mA		0.135	0.180	Ω
		V_{GS} = –2.5V, I_D = –100mA		0.165	0.200	Ω
		V_{GS} = –1.8V, I_D = –100mA		0.225	0.320	Ω
g_{FS}	Forward Transconductance	V_{DS} = –5.5V, I_D = –200mA, **Note 5**		3		S

Note 1. T_A = 25°C unless noted. Substrate connected to source for all conditions.

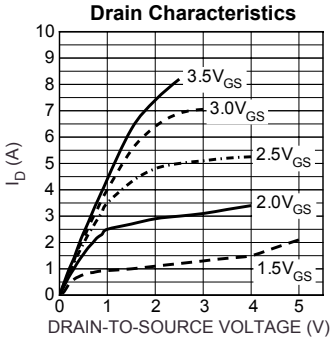
Note 2. ESD gate precautions required

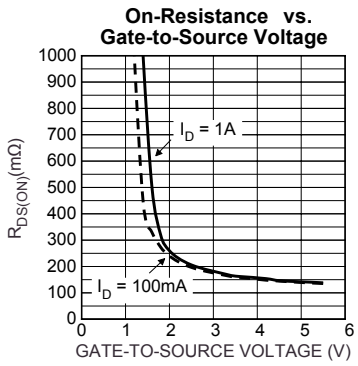
Note 3. MIC94050 only.

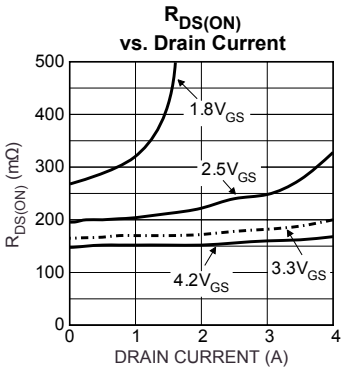
Note 4. MIC94051 only.

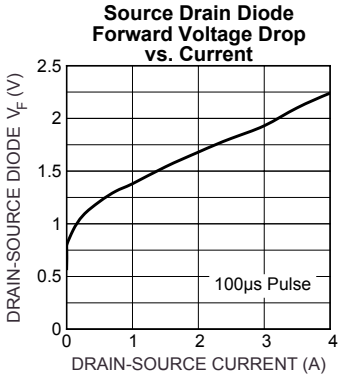
Note 5. Pulse Test: Pulse Width ≤ 80µs, Duty Cycle ≤ 0.5%.

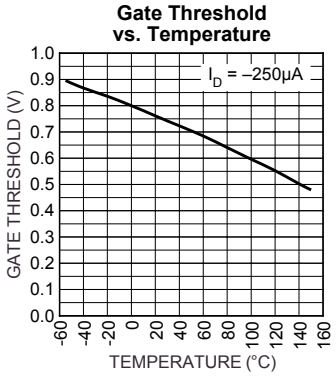
Typical Characteristics

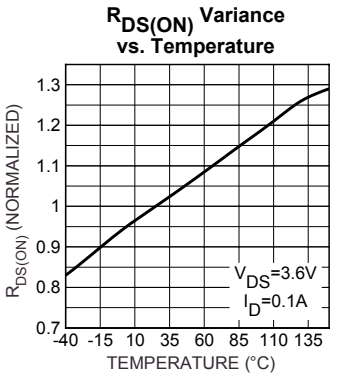












Typical Applications

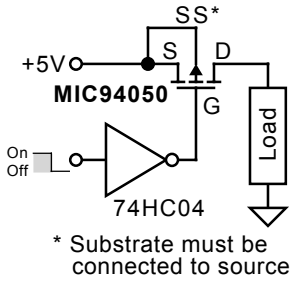


Figure 1. Load Switch Application

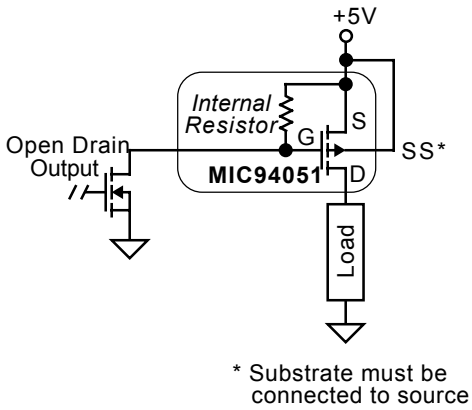
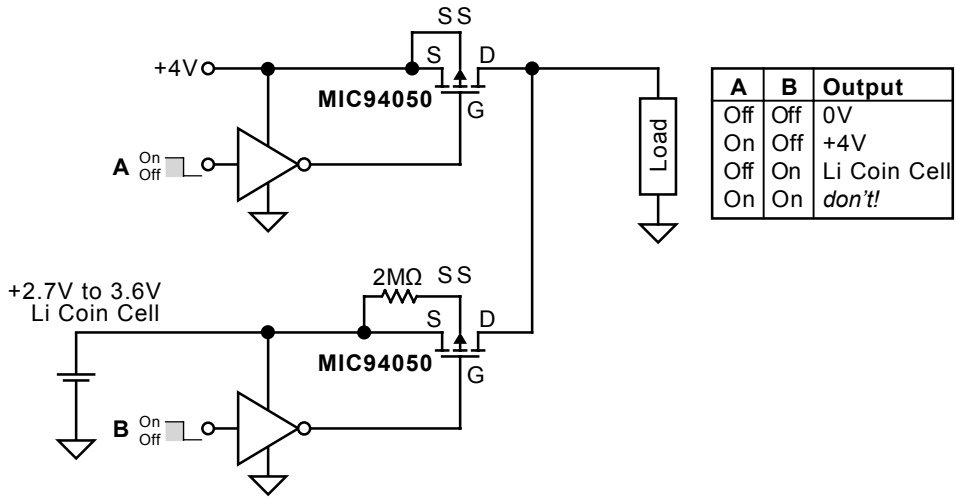


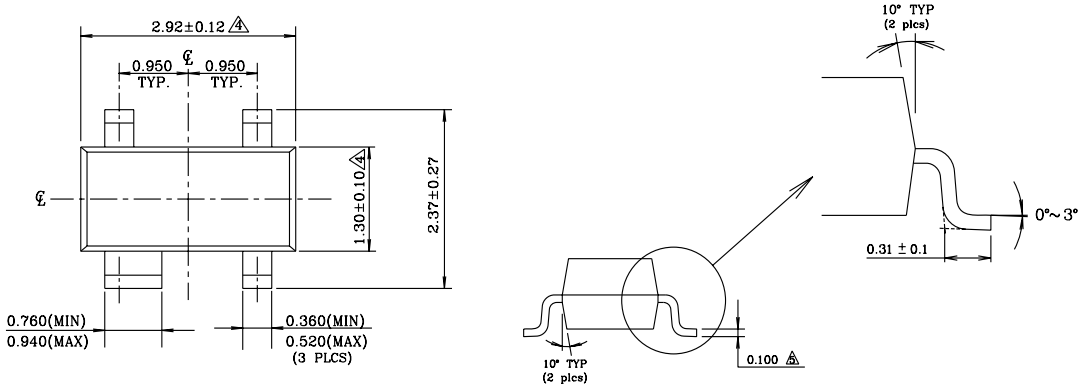
Figure 2. Load Switch Application (with internal gate-source pull-up)



A	B	Output
Off	Off	0V
On	Off	+4V
Off	On	Li Coin Cell
On	On	*don't!*

Figure 3. Reverse-Blocking Battery Back-Up Application

Package Information



NOTE:

1. Dimensions and tolerances are as per ANSI Y14.5M, 1982.
2. Package surface to be mirror finish.
3. Die is facing up for mold & trim/form.
4. Dimension are exclusive of mold flash and gate burr.
5. Dimension are exclusive of solder plating.

SOT-143 (M4)

MICREL, INC. 2180 FORTUNE DRIVE SAN JOSE, CA 95131 USA

TEL + 1 (408) 944-0800 FAX + 1 (408) 474-1000 WEB http://www.micrel.com