

Absolute Maximum Ratings

Drain-to-Source Voltage -6V
 Gate-to-Source Voltage -6V
 Continuous Drain Current
 $T_A = 25^\circ\text{C}$ ($V_{GS} = 4.5\text{V}$) 1.8A
 $T_A = 100^\circ\text{C}$ ($V_{GS} = 4.5\text{V}$) 1.2A
 Total Power Dissipation
 $T_A = 25^\circ\text{C}$ 568mW
 $T_A = 100^\circ\text{C}$ 227mW
 Operating Junction Temperature -40°C to $+150^\circ\text{C}$
 Storage Temperature -55°C to $+150^\circ\text{C}$
 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	$V_{DS} = V_{GS}$, $I_D = -250\mu\text{A}$	0.5		1.2	V
I_{GSS}	Gate-Body Leakage	$V_{DS} = 0\text{V}$, $V_{GS} = -4.5\text{V}$, Note 2, Note 3			1	μA
R_{GS}	Gate-Source Resistance	$V_{DS} = 0\text{V}$, $V_{GS} = -4.5\text{V}$, Note 2, Note 4	200	350	500	k Ω
C_{ISS}	Input Capacitance	$V_{GS} = 0\text{V}$, $V_{DS} = -5.5\text{V}$		600		pF
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = -5.5\text{V}$, $V_{GS} = 0\text{V}$			1	μA
		$V_{DS} = -5.5\text{V}$, $V_{GS} = 0\text{V}$, $T_J = 85^\circ\text{C}$			5	μA
$R_{DS(ON)}$	Drain-Source On-Resistance	$V_{GS} = -4.5\text{V}$, $I_D = -100\text{mA}$		0.125	0.160	Ω
		$V_{GS} = -3.6\text{V}$, $I_D = -100\text{mA}$		0.135	0.180	Ω
		$V_{GS} = -2.5\text{V}$, $I_D = -100\text{mA}$		0.165	0.200	Ω
		$V_{GS} = -1.8\text{V}$, $I_D = -100\text{mA}$		0.225	0.320	Ω
g_{FS}	Forward Transconductance	$V_{DS} = -5.5\text{V}$, $I_D = -200\text{mA}$, Note 5		3		S

Note 1. $T_A = 25^\circ\text{C}$ unless noted. Substrate connected to source for all conditions.

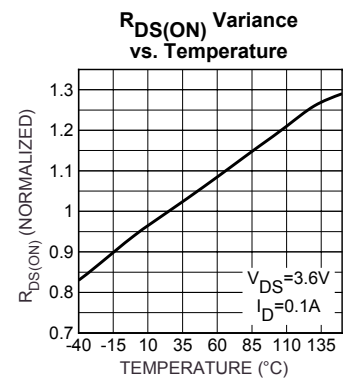
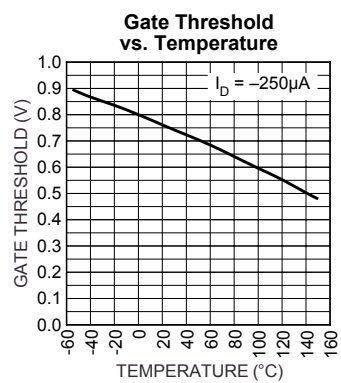
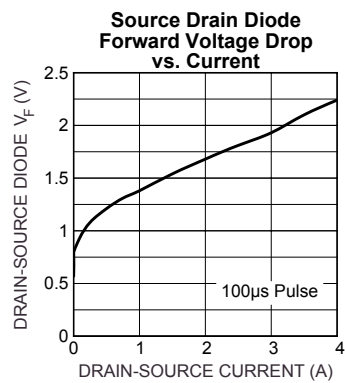
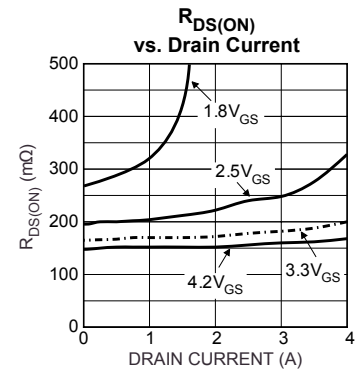
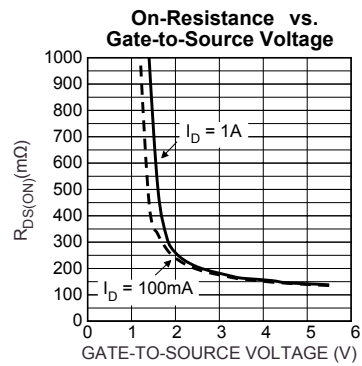
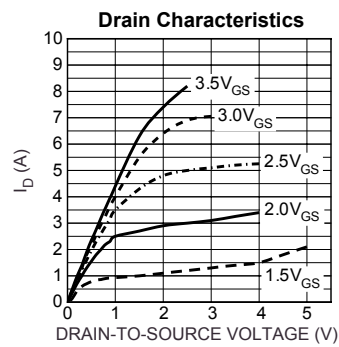
Note 2. ESD gate  precautions required

Note 3. MIC94050 only.

Note 4. MIC94051 only.

Note 5. Pulse Test: Pulse Width $\leq 80\mu\text{s}$, Duty Cycle $\leq 0.5\%$.

Typical Characteristics



Typical Applications

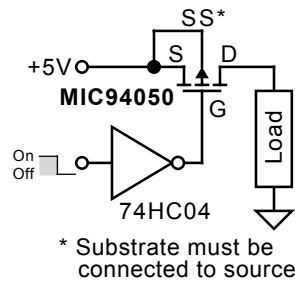
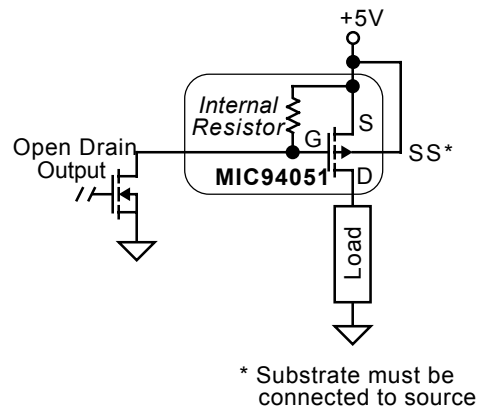


Figure 1. Load Switch Application



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

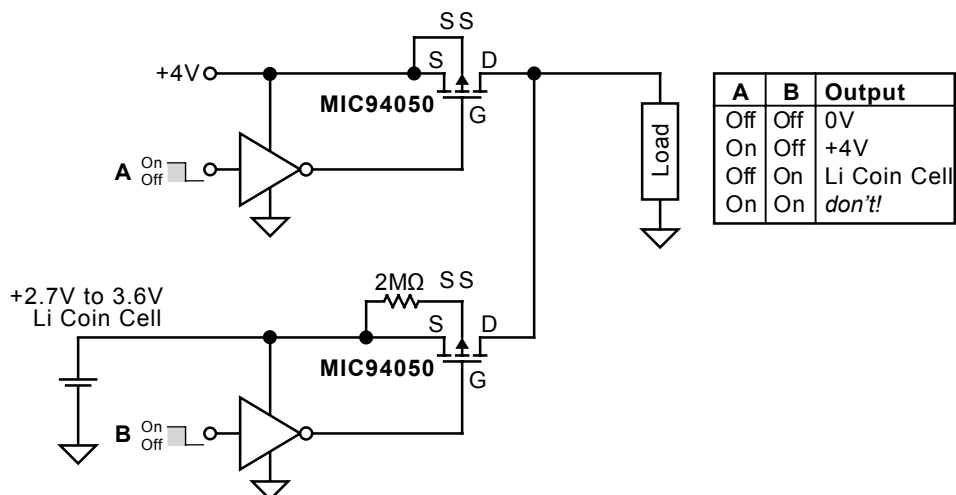
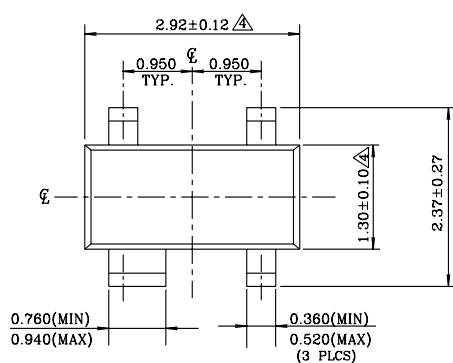
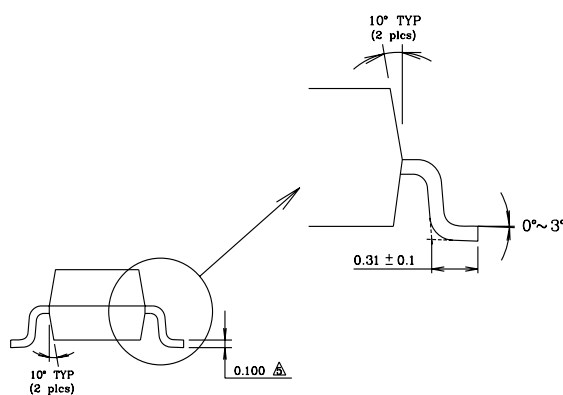


Figure 3. Reverse-Blocking Battery Back-Up Application

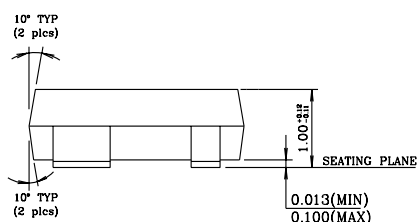
Package Information



TOP VIEW



END VIEW



SIDE VIEW

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.
- △ Dimension are exclusive of mold flash and gate burr.
 △ Dimension are exclusive of solder plating.

SOT-143 (M4)

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