Honeywell


# Magnetoresistive Sensor ICs

**Nanopower Series**

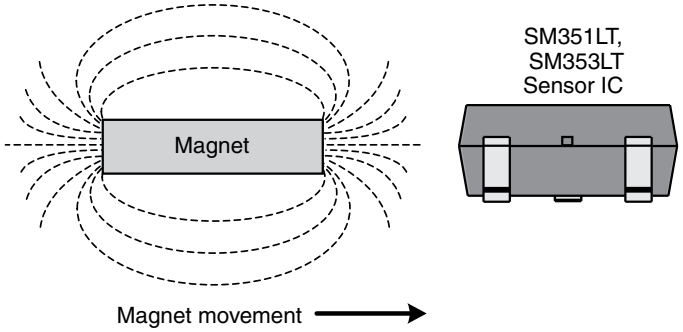
Datasheet

Figure 2. Alignment of the Magnet to the Omnipolar Magnetoresistive Sensor IC

## Ideal alignment: The magnet is aligned in the same plane as the sensor IC.

The magnetic flux lines stay horizontal as the magnet approaches the sensor IC (see Figure 2.A).

**Figure 2.A**

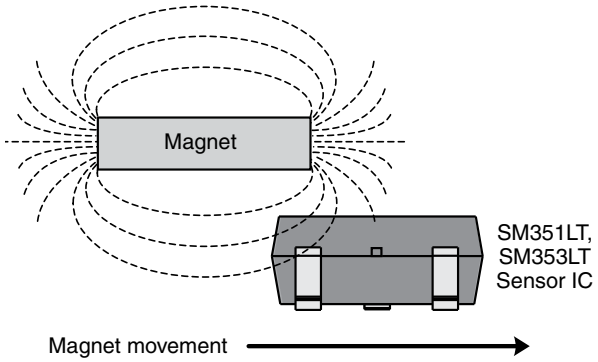



## Offset alignment: The magnet is not aligned in the same plane as the sensor IC.

**Parallel magnet approach to the sensor IC may cause dead zones.**

Dead zones may occur when the majority of the magnet's magnetic flux lines become vertical as it approaches the sensor IC, turning the sensor IC to ON, then OFF, then ON (see Figure 2.B).

**Figure 2.B**




**Perpendicular magnet approach to the sensor IC eliminates possible dead zones.**

The sensor IC detects the approaching magnet's horizontal magnetic flux lines, turning the sensor IC to ON. The sensor IC stays ON as the magnet continues to approach. When the magnet is located directly over the sensor IC, all magnetic flux lines are now horizontal (see Figure 2.C). (Note: This alignment decreases the magnetic flux strength at the sensor IC.)

**Figure 2.C**

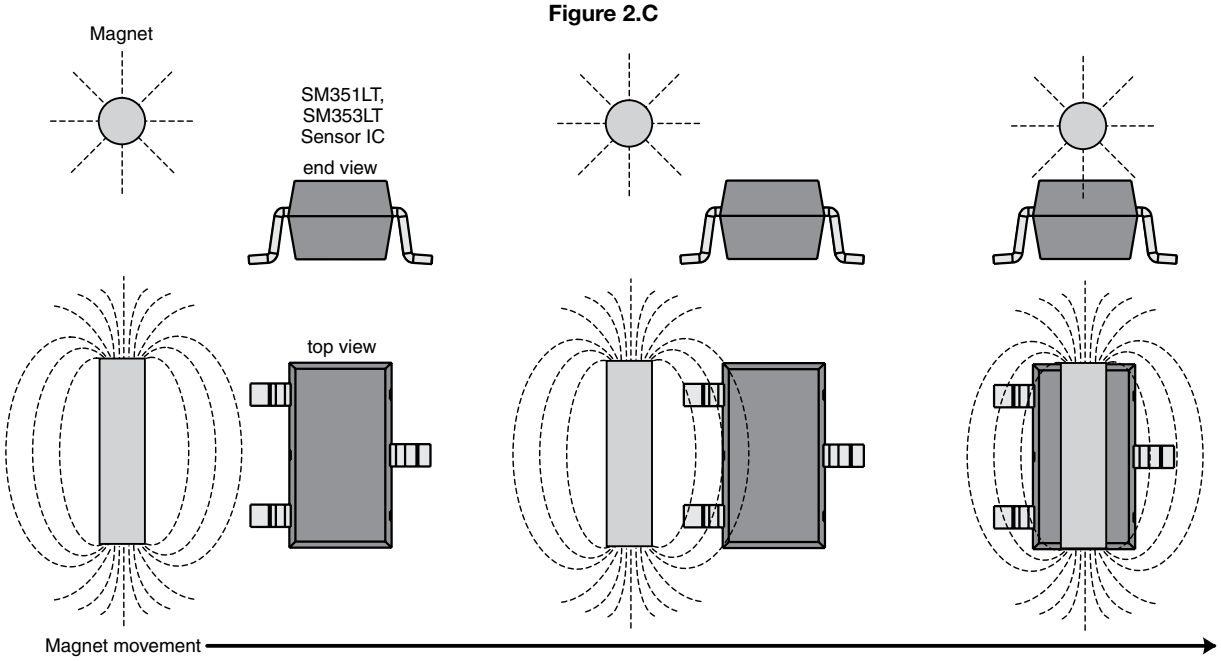
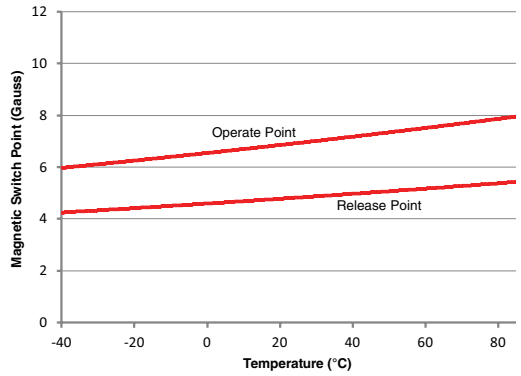
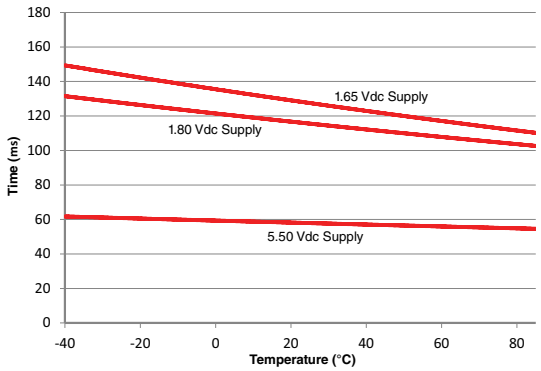


Figure 3. SM351LT Typical Performance Characteristics

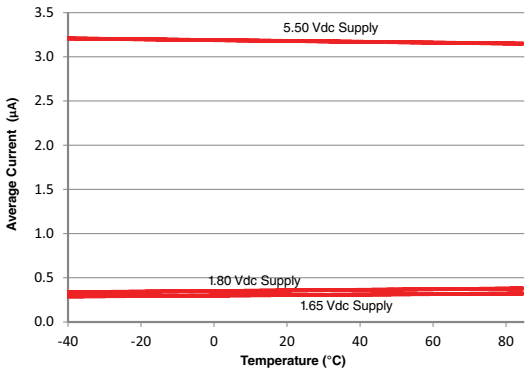
### Magnetic Performance vs Temperature (Vs = 1.8 V)




### Period vs Temperature




### Average Current vs Temperature




### Active Mode Time vs Temperature

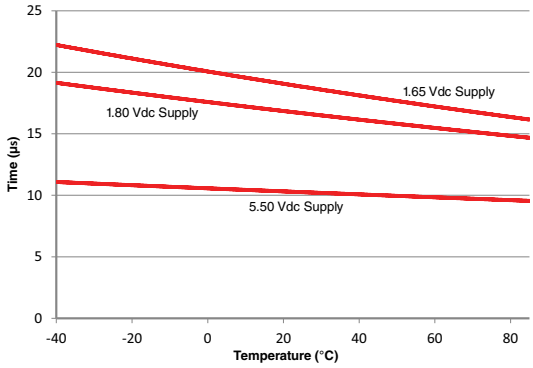
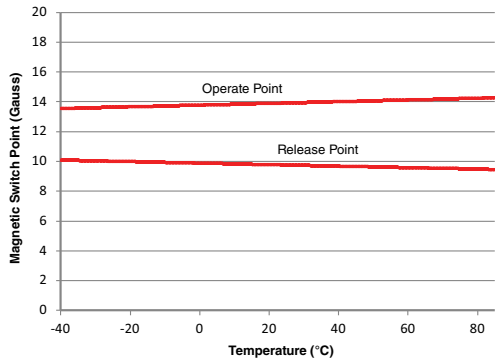
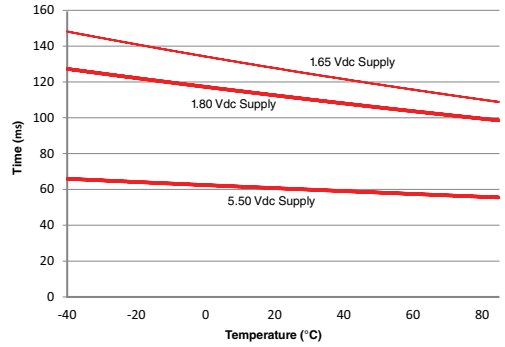



Figure 4. SM353LT Typical Performance Characteristics

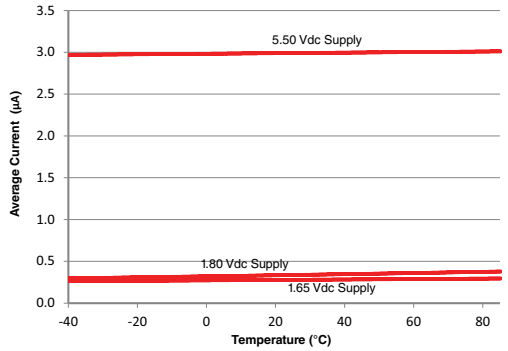
### Magnetic Performance vs Temperature (Vs = 1.8 V)




### Period vs Temperature




### Average Current vs Temperature




### Active Mode Time vs Temperature