The DSBSC modulation is one type of modulation in which the message is carried on the amplitude of a sinusoidal signal.
Mathematically DSBSC wave can be said to be equal to the product of message and carrier signal.
If Message Signal is $f_m(t) = V_m sin\omega_m t$ and Carrier Signal is $f_c(t) = V_c sin\omega_c t$
Then their product will be,

$$f_m(t) * f_c(t) = V_m V_c (sin\omega_m t * sin\omega_c t)$$

Which gives,

$$F1(t) = A * [\cos((\omega_c - \omega_m) t) - \cos((\omega_c + \omega_m) t)]$$

Thus $F(t)$ can be said to be a DSBSC wave since it has two sideband components $\omega_c - \omega_m$ and $\omega_c + \omega_m$.

The product of the two signals is obtained by using a Product-Modulator Circuit.

Demodulation of a DSBSC involves a Product-Modulator Circuit followed by a low pass filter. Here the one input to the Modulator is the DSBSC wave and the other input is a signal of unit amplitude which has exactly the same frequency and phase as that of carrier signal.

$$F2(t) = A * [\cos((\omega_c - \omega_m) t) - \cos((\omega_c + \omega_m) t)] * sin\omega_c t$$

Therefore,

$$F2(t) = \frac{A}{2}\sin((2\omega_c - \omega_m) t) + \frac{A}{2}\sin((2\omega_c + \omega_m) t) + \frac{A}{2} sin\omega_m t + \frac{A}{2} sin\omega_m t$$

The frequencies $2\omega_c - \omega_m \quad and \quad 2\omega_c + \omega_m$ are removed by the low pass filter.
The low pass filter is selected to have pass band edge frequency of twice the frequency of message signal.

Thus the message signal is obtained as

$$F2(t) = \frac{A}{2} sin\omega_m t + \frac{A}{2} sin\omega_m t$$

Here the two terms are obtained from two sidebands each, thus it can be said that transmission of information is possible even with a single sideband!

Conclusion:
DSBSC transmits the message signal with two sidebands, thus it consumes less power as compared to DSBFC, However the circuit gets complex.
Its demodulation always requires the availability of the carrier signal in the demodulator. The carrier at the demodulator must have the same frequency and phase of the carrier at the transmitter or some parts of the message signal will be lost.
The generation of the carrier signal at exactly the same frequency and phase of the carrier at the modulation is relatively expensive and may drive the cost of the demodulator to be higher.