

### Features

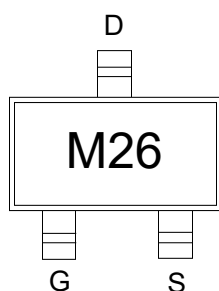
- Leading trench technology for low  $R_{DS(on)}$
- Low Gate Charge

### Product Summary

| $V_{DS}$ | $R_{DS(on)}$ MAX | $I_D$ MAX |
|----------|------------------|-----------|
| -20V     | 66mΩ@-4.5V       | -3.8A     |
|          | 86mΩ@-2.5V       |           |

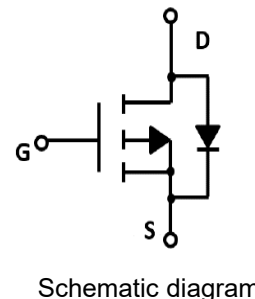
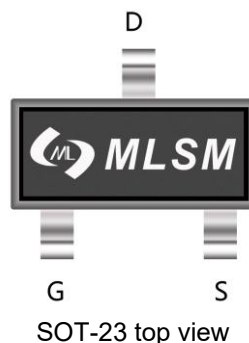
### Application

- Video monitor
- Power management



M26: Device code

Marking and pin assignment



Halogen-Free

### Absolute Maximum Ratings (TA=25°C unless otherwise noted)

| Symbol | Parameter | Rating | Unit |
|--------|-----------|--------|------|
|--------|-----------|--------|------|

### Common Ratings (TC=25°C Unless Otherwise Noted)

|           |                                  |                                |    |
|-----------|----------------------------------|--------------------------------|----|
| $V_{DS}$  | Drain-Source Breakdown Voltage   | -20                            | V  |
| $V_{GS}$  | Gate-Source Voltage              | ±8                             | V  |
| $T_J$     | Maximum Junction Temperature     | 150                            | °C |
| $T_{STG}$ | Storage Temperature Range        | -55 to 150                     | °C |
| $I_S$     | Diode Continuous Forward Current | $T_c=25^\circ\text{C}$<br>-1.4 | A  |

### Mounted on Large Heat Sink

|                 |                                        |                                |      |
|-----------------|----------------------------------------|--------------------------------|------|
| $I_{DM}$        | Pulse Drain Current Tested             | $T_c=25^\circ\text{C}$<br>-15  | A    |
| $I_D$           | Continuous Drain Current@GS=10V        | $T_c=25^\circ\text{C}$<br>-3.8 | A    |
| $P_D$           | Maximum Power Dissipation              | $T_c=25^\circ\text{C}$<br>1.7  | W    |
| $R_{\theta JA}$ | Thermal Resistance Junction-to-Ambient | 357                            | °C/W |

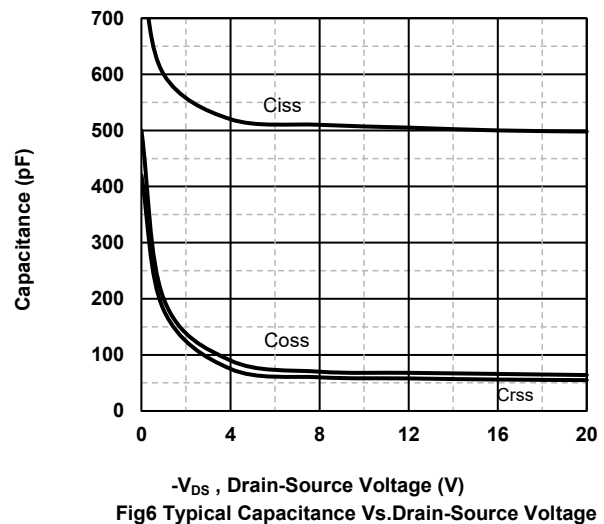
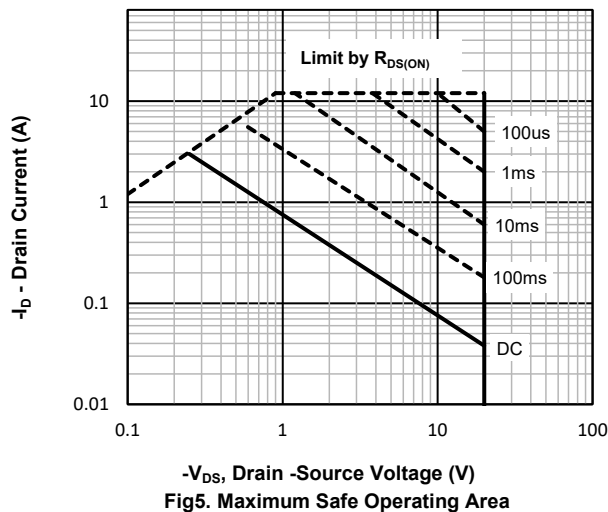
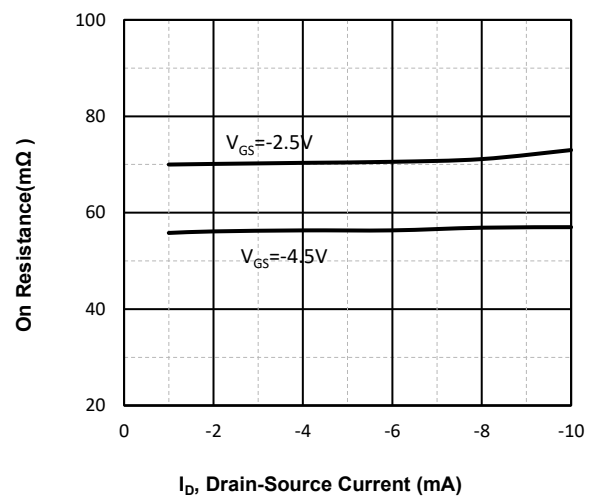
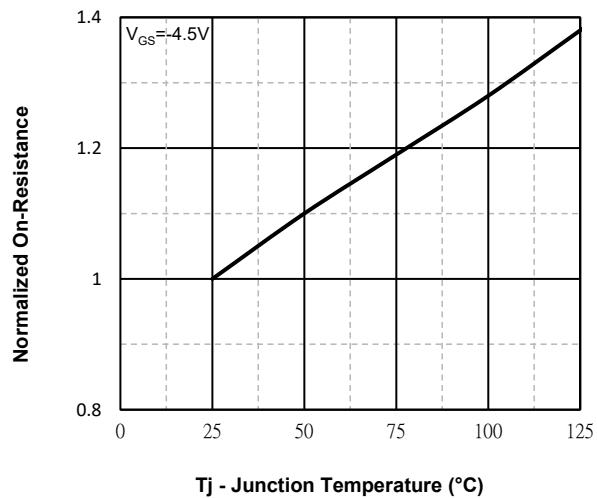
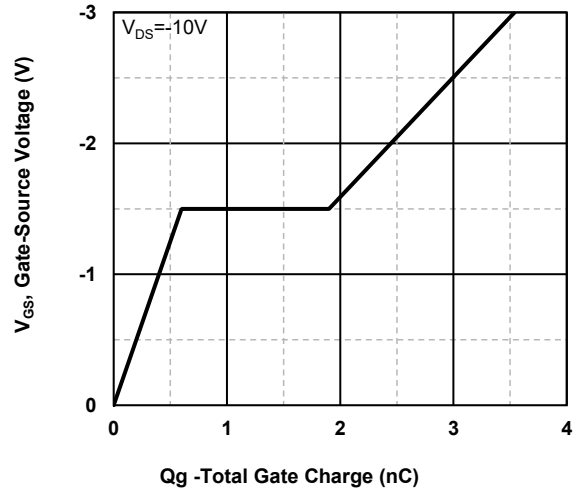
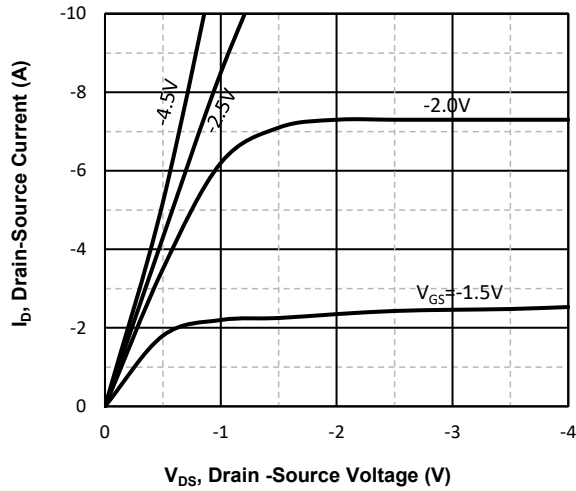
### Ordering Information (Example)

| Type     | Package | Marking | Minimum Package(pcs) | Inner Box Quantity(pcs) | Outer Carton Quantity(pcs) | Delivery Mode |
|----------|---------|---------|----------------------|-------------------------|----------------------------|---------------|
| Si2367DS | SOT-23  | M26     | 3,000                | 45,000                  | 180,000                    | 7"reel        |

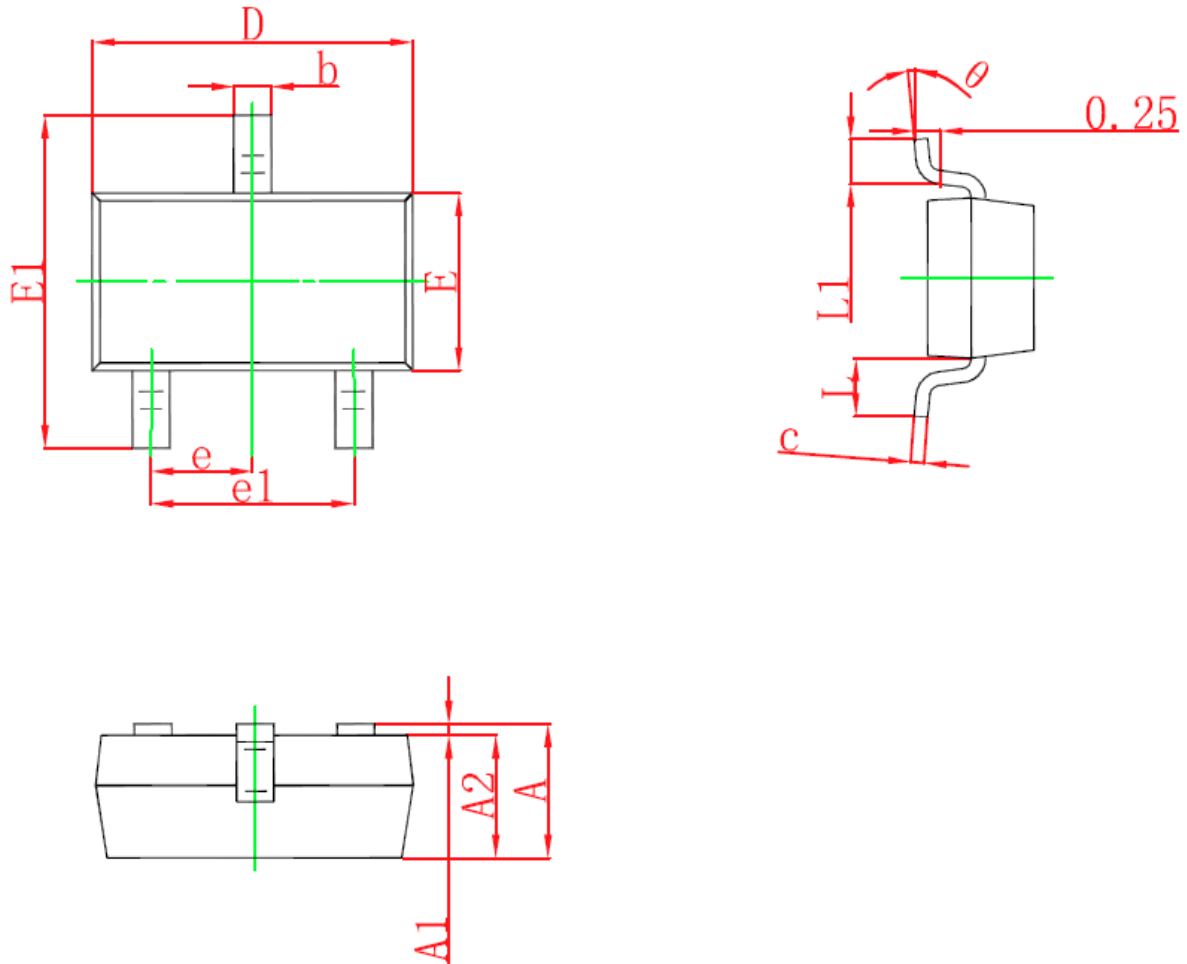
**Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)**

| Symbol                                                                               | Parameter                        | Condition                                                                                                  | Min  | Typ   | Max  | Unit |
|--------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------|------|-------|------|------|
| Static Electrical Characteristics @ T <sub>J</sub> = 25°C (unless otherwise stated)  |                                  |                                                                                                            |      |       |      |      |
| B <sub>V(BR)DSS</sub>                                                                | Drain-Source Breakdown Voltage   | V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA                                                                | -20  | —     | —    | V    |
| I <sub>DSS</sub>                                                                     | Zero Gate Voltage Drain Current  | V <sub>DS</sub> =-20V, V <sub>GS</sub> =0V                                                                 | —    | —     | -1   | μA   |
| I <sub>GSS</sub>                                                                     | Gate-Body Leakage Current        | V <sub>GS</sub> =±8V, V <sub>DS</sub> =0V                                                                  | —    | —     | ±100 | nA   |
| V <sub>GS(th)</sub>                                                                  | Gate Threshold Voltage           | V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA                                                  | -0.4 | —     | -1.0 | V    |
| R <sub>DS(on)</sub>                                                                  | Drain-Source On-State Resistance | V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-2.5A                                                              | —    | 55    | 66   | mΩ   |
|                                                                                      |                                  | V <sub>GS</sub> =-2.5V, I <sub>D</sub> =-2A                                                                | —    | 71    | 86   | mΩ   |
|                                                                                      |                                  | V <sub>GS</sub> =-1.8V, I <sub>D</sub> =-1.5A                                                              | —    | 100   | 130  | mΩ   |
| Dynamic Electrical Characteristics @ T <sub>J</sub> = 25°C (unless otherwise stated) |                                  |                                                                                                            |      |       |      |      |
| C <sub>ISS</sub>                                                                     | Input Capacitance                | V <sub>DS</sub> =-10V, V <sub>GS</sub> =0V, f=1MHz                                                         | —    | 561   | —    | pF   |
| C <sub>OSS</sub>                                                                     | Output Capacitance               |                                                                                                            | —    | 112   | —    | pF   |
| C <sub>RSS</sub>                                                                     | Reverse Transfer Capacitance     |                                                                                                            | —    | 89    | —    | pF   |
| Switching Characteristics                                                            |                                  |                                                                                                            |      |       |      |      |
| Q <sub>g</sub>                                                                       | Total Gate Charge                | V <sub>DS</sub> =-10V, I <sub>D</sub> =-2.5A, V <sub>GS</sub> =-4.5V                                       | —    | 9     | —    | nC   |
| Q <sub>gs</sub>                                                                      | Gate Source Charge               |                                                                                                            | —    | 1     | —    | nC   |
| Q <sub>gd</sub>                                                                      | Gate Drain Charge                |                                                                                                            | —    | 2.5   | —    | nC   |
| t <sub>d(on)</sub>                                                                   | Turn-on Delay Time               | V <sub>DS</sub> =-10V, I <sub>D</sub> =-2A, V <sub>GS</sub> =-4.5V, R <sub>G</sub> =1Ω, R <sub>L</sub> =5Ω | —    | 20    | —    | nS   |
| t <sub>r</sub>                                                                       | Turn-on Rise Time                |                                                                                                            | —    | 20    | —    | nS   |
| t <sub>d(off)</sub>                                                                  | Turn-Off Delay Time              |                                                                                                            | —    | 40    | —    | nS   |
| t <sub>f</sub>                                                                       | Turn-Off Fall Time               |                                                                                                            | —    | 10    | —    | nS   |
| Source- Drain Diode Characteristics                                                  |                                  |                                                                                                            |      |       |      |      |
| V <sub>SD</sub>                                                                      | Forward on voltage               | T <sub>J</sub> =25°C, I <sub>S</sub> =-2A                                                                  | —    | -0.79 | -1.2 | V    |

## Typical Operating Characteristics



**SOT-23 Package information**



| Symbol | Dimensions in Millimeters(mm) |       | Dimensions In Inches |       |
|--------|-------------------------------|-------|----------------------|-------|
|        | Min                           | Max   | Min                  | Max   |
| A      | 0.900                         | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                         | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                         | 1.050 | 0.035                | 0.041 |
| b      | 0.300                         | 0.500 | 0.012                | 0.020 |
| c      | 0.080                         | 0.150 | 0.003                | 0.006 |
| D      | 2.800                         | 3.000 | 0.110                | 0.118 |
| E1     | 2.250                         | 2.550 | 0.088                | 0.100 |
| E      | 1.200                         | 1.400 | 0.047                | 0.055 |
| e      | 0.950TYP                      |       | 0.037TYP             |       |
| e1     | 1.800                         | 2.000 | 0.071                | 0.079 |
| L      | 0.550 REF                     |       | 0.022 REF            |       |
| L1     | 0.300                         | 0.500 | 0.012                | 0.020 |
| θ      | 0°                            | 8°    | 0°                   | 8°    |