Ordering number : EN7169A

# 2SK3557

## N-Channel JFET
## 15V, 10 to 32mA, 35mS, CP

ON Semiconductor®
http://onsemi.com

### Applications

- AM tuner RF amplification
- Low noise amplifier

### Features

- Large | yfs |
- Small Ciss
- Ultrasmall-sized package permitting 2SK3557-applied sets to be made smaller and slimer
- Ultralow noise figure

### Specifications

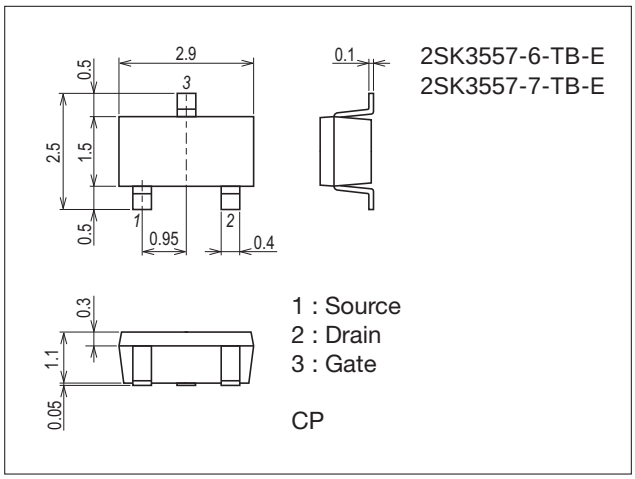
**Absolute Maximum Ratings** at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Drain-to-Source Voltage | $V_{DSX}$ | | 15 | V |
| Gate-to-Drain Voltage | $V_{GDS}$ | | −15 | V |
| Gate Current | $I_G$ | | 10 | mA |
| Drain Current | $I_D$ | | 50 | mA |
| Allowable Power Dissipation | $P_D$ | | 200 | mW |
| Junction Temperature | Tj | | 150 | °C |
| Storage Temperature | Tstg | | −55 to +150 | °C |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

### Package Dimensions

unit : mm (typ)
7013A-011

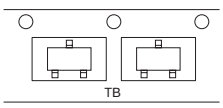



2SK3557-6-TB-E
2SK3557-7-TB-E

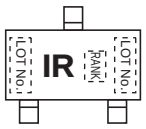
### Product & Package Information

- Package : CP
- JEITA, JEDEC : SC-59, TO-236, SOT-23, TO-236AB
- Minimum Packing Quantity : 3,000 pcs./reel

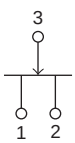
### Packing Type: TL




### Marking




### Electrical Connection



## Electrical Characteristics at Ta=25°C

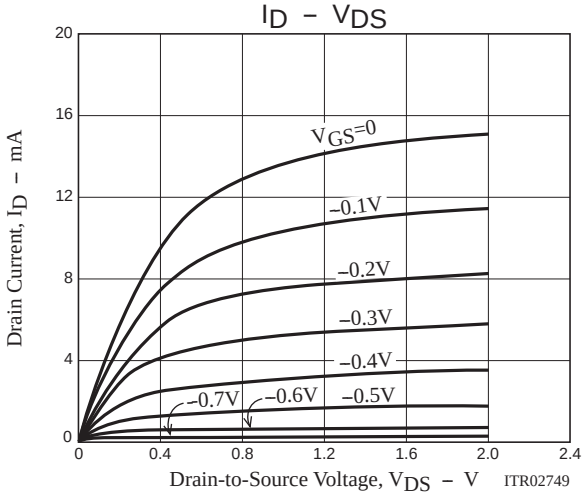
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Gate-to-Drain Breakdown Voltage | $V_{(BR)GDS}$ | $I_G$=−10μA, $V_{DS}$=0V | −15 | | | V |
| Gate Cutoff Current | $I_{GSS}$ | $V_{GS}$=−10V, $V_{DS}$=0V | | | −1.0 | nA |
| Cutoff Voltage | $V_{GS}$(off) | $V_{DS}$=5V, $I_D$=100μA | −0.3 | −0.7 | −1.5 | V |
| Drain Current | $I_{DSS}$ | $V_{DS}$=5V, $V_{GS}$=0V | 10* | | 32* | mA |
| Forward Transfer Admittance | \| yfs \| | $V_{DS}$=5V, $V_{GS}$=0V, f=1kHz | 24 | 35 | | mS |
| Input Capacitance | Ciss | $V_{DS}$=5V, $V_{GS}$=0V, f=1MHz | | 10.0 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}$=5V, $V_{GS}$=0V, f=1MHz | | 2.9 | | pF |
| Noise Figure | NF | $V_{DS}$=5V, $R_g$=1kΩ, $I_D$=1mA, f=1kHz | | 1.0 | | dB |

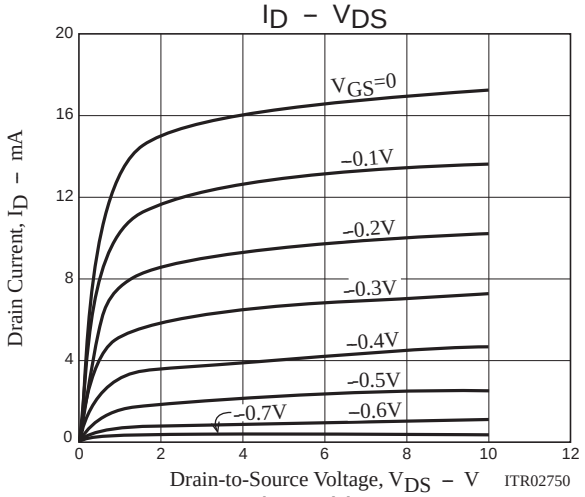
* : The 2SK3557 is classified by $I_{DSS}$ as follows : (unit : mA)

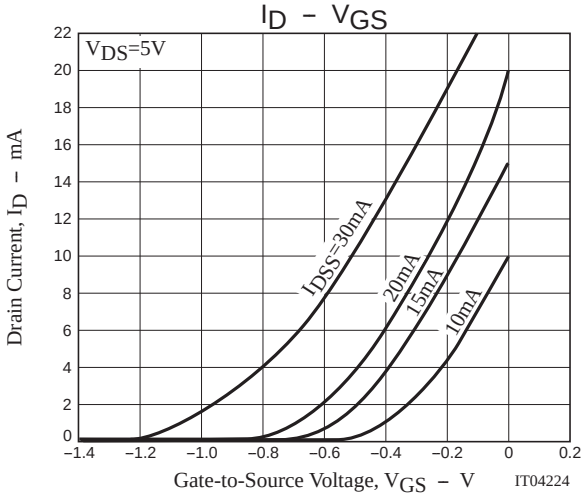
| Rank | 6 | 7 |
|---|---|---|
| $I_{DSS}$ | 10.0 to 20.0 | 16.0 to 32.0 |

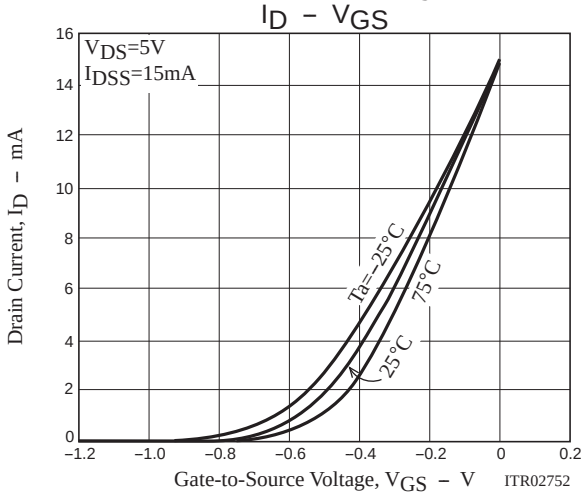
## Ordering Information

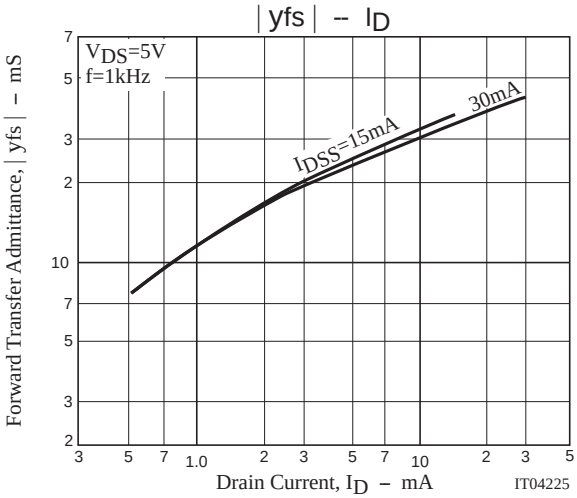
| Device | Package | Shipping | memo |
|---|---|---|---|
| 2SK3557-6-TB-E | CP | 3,000pcs./reel | Pb Free |
| 2SK3557-7-TB-E | CP | 3,000pcs./reel | |

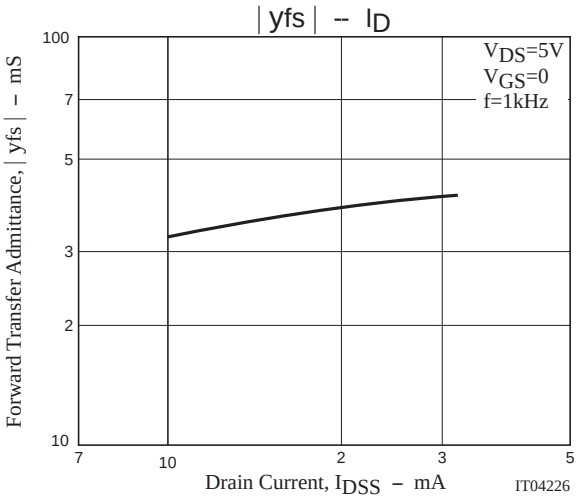


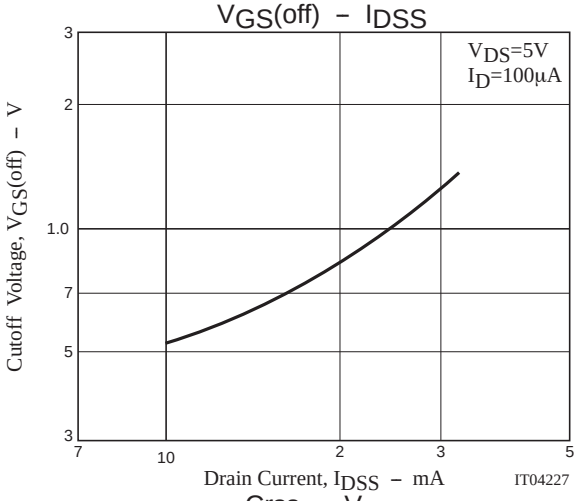



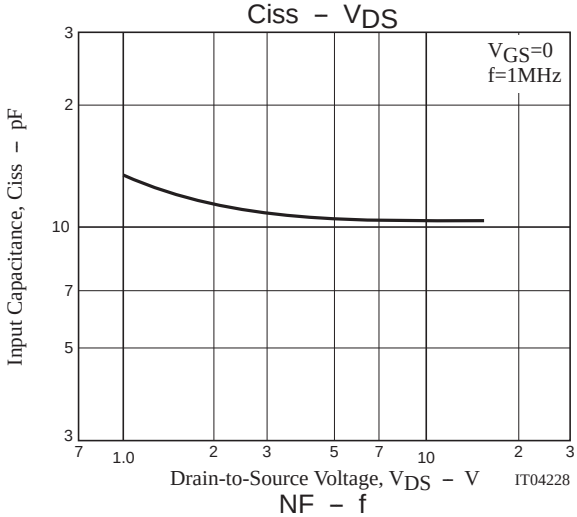



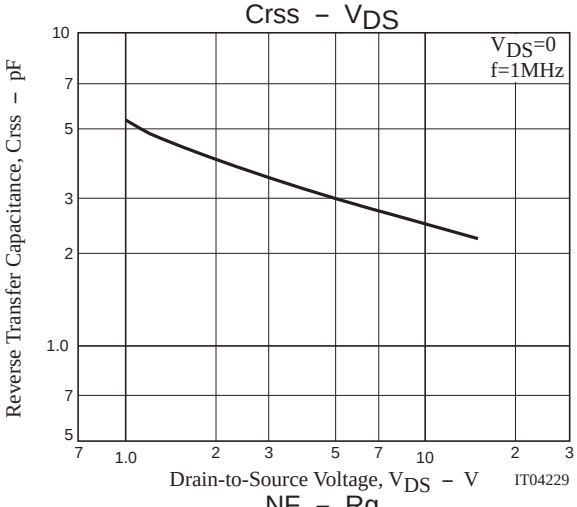



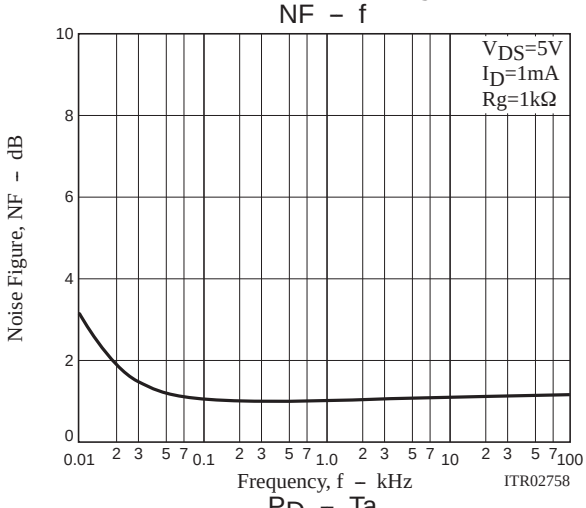

| yfs | -- ID
VDS=5V
f=1kHz
IDSS=15mA
30mA
Forward Transfer Admittance, | yfs | – mS
Drain Current, ID – mA
IT04225

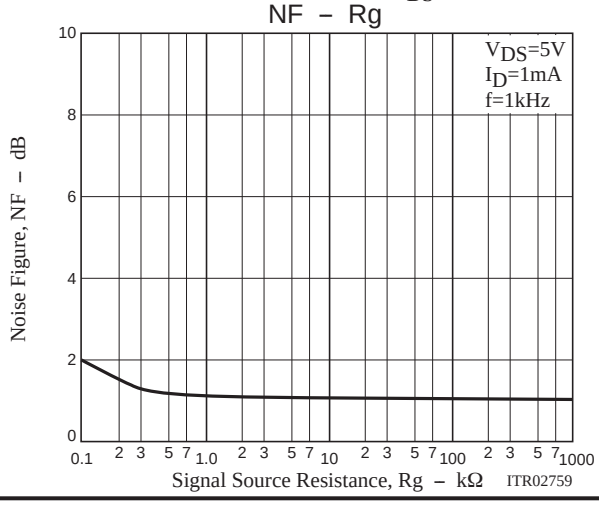

| yfs | -- ID
VDS=5V
VGS=0
f=1kHz
Forward Transfer Admittance, | yfs | – mS
Drain Current, IDSS – mA
IT04226

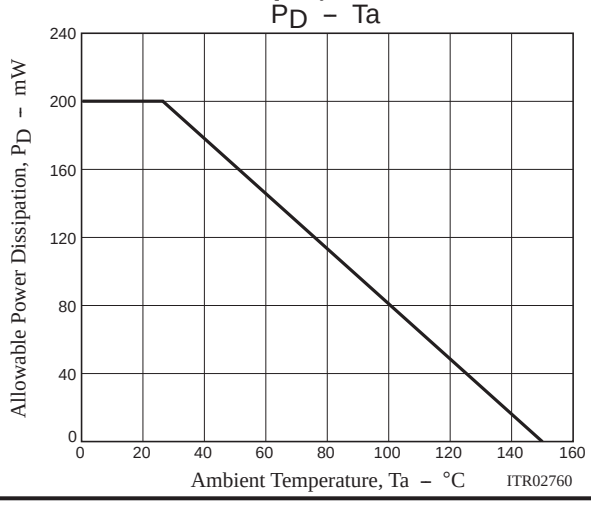

VGS(off) – IDSS
VDS=5V
ID=100μA
Cutoff Voltage, VGS(off) – V
Drain Current, IDSS – mA
IT04227


Ciss – VDS
VGS=0
f=1MHz
Input Capacitance, Ciss – pF
Drain-to-Source Voltage, VDS – V
IT04228


Crss – VDS
VDS=0
f=1MHz
Reverse Transfer Capacitance, Crss – pF
Drain-to-Source Voltage, VDS – V
IT04229


NF – f
VDS=5V
ID=1mA
Rg=1kΩ
Noise Figure, NF – dB
Frequency, f – kHz
ITR02758


NF – Rg
VDS=5V
ID=1mA
f=1kHz
Noise Figure, NF – dB
Signal Source Resistance, Rg – kΩ
ITR02759


PD – Ta
Allowable Power Dissipation, PD – mW
Ambient Temperature, Ta – °C
ITR02760

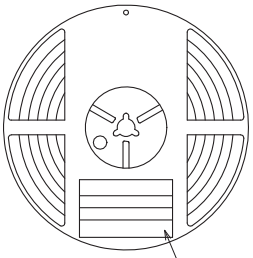
**Embossed Taping Specification**

2SK3557-6-TB-E, 2SK3557-7-TB-E

## 1. Packing Format

| Package Name | Carrier Tape Type | Maximum Number of devices contained (pcs) | | | Packing format | |
|---|---|---|---|---|---|---|
| | | Reel | Inner box | Outer box | Inner BOX (C-1) | Outer BOX (A-7) |
| CP | CP | 3,000 | 15,000 | 90,000 | 5 reels contained<br>Dimensions:mm (external)<br>183×72×185 | 6 inner boxes contained<br>Dimensions:mm (external)<br>440×195×210 |

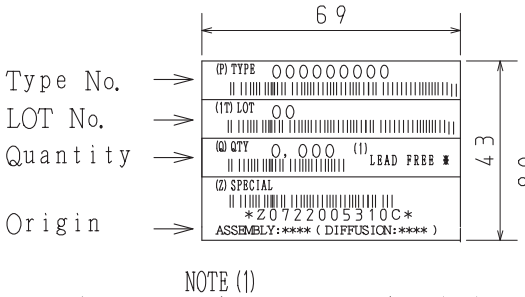
Packing method



Reel label

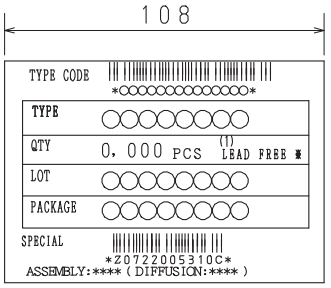
Reel label, Inner box label

(unit:mm)




Outer box label

It is a label at the time of factory shipments. The form of a label may change in physical distribution process.

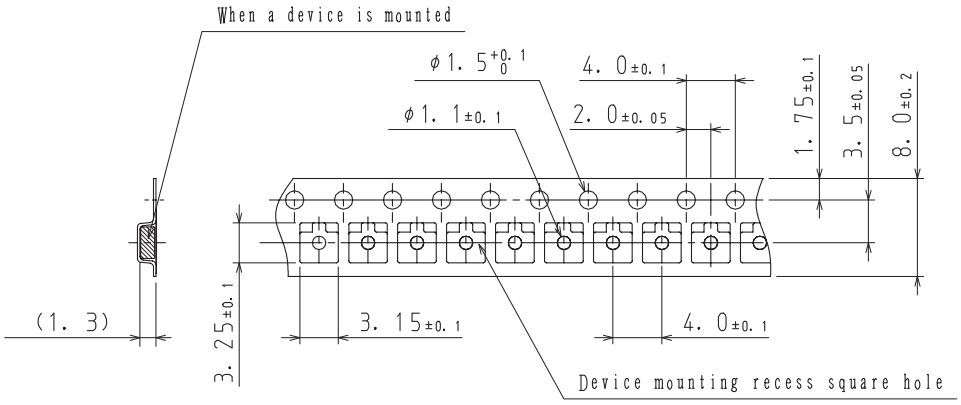



NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

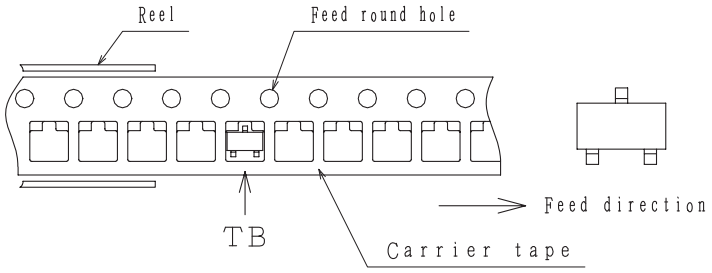
| Label | JEITA Phase |
|---|---|
| LEAD FREE 3 | JEITA Phase 3A |
| LEAD FREE 4 | JEITA Phase 3 |

## 2. Taping configuration

### 2-1. Carrier tape size (unit:mm)



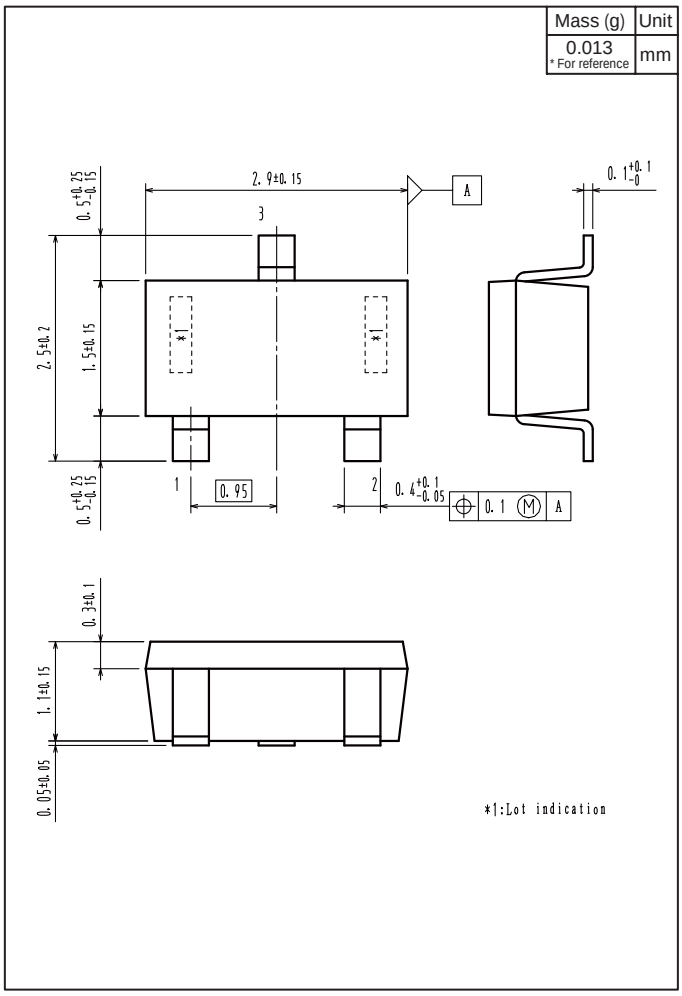

### 2-2. Device placement direction



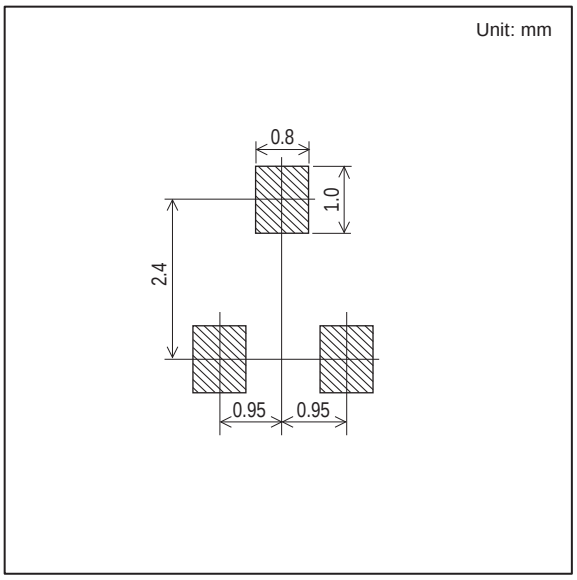

Those with one electrode terminal on the feed hole side……TB

## Outline Drawing

2SK3557-6-TB-E, 2SK3557-7-TB-E




## Land Pattern Example



ON Semiconductor and the ON logo are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of SCILLC's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ON Semiconductor:

2SK3557-6-TB-E 2SK3557-7-TB-E