

# N-Channel JFET

## 40 V, 55 to 95 $\mu$ A, 0.10 ms, CP

### 2SK545



SC-59 / CP3  
CASE 318BJ

#### Features

- Small  $I_{GSS}$
- Small  $C_{iss}$
- Ultrasmall Package permitting 2SK545-applied Sets to be Compact
- This is a Pb-Free Device

#### Applications

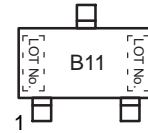
- Impedance Converter Applications
- Infrared Sensor

#### ABSOLUTE MAXIMUM RATINGS (at $T_A = 25^\circ\text{C}$ )

Parameter	Symbol	Ratings	Unit
Drain-to-Source Voltage	$V_{DSS}$	40	V
Gate-to-Drain Voltage	$V_{GDS}$	-40	V
Gate Current	$I_G$	10	mA
Drain Current	$I_D$	1	mA
Allowable Power Dissipation	$P_D$	100	mW
Junction Temperature	$T_J$	125	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55 to +125	$^\circ\text{C}$

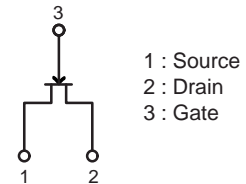
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

#### MARKING DIAGRAM



B11 = Specific Device Code

#### ELECTRICAL CONNECTION



1 : Source  
2 : Drain  
3 : Gate

#### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
2SK545-11D-TB-E	SC-59/CP3 (Pb-Free)	3000 / Tape & Reel

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

Table 1. ELECTRICAL CHARACTERISTICS (at  $T_A = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	$I_D = -10 \mu\text{A}, V_{DS} = 0 \text{V}$	-40			V
Gate Cutoff Current	$I_{GSS}$	$V_{GS} = -20 \text{V}, V_{DS} = 0 \text{V}$			-500	pA
Drain Current	$I_{DSS}$	$V_{DS} = 10 \text{V}, V_{GS} = 0 \text{V}$	55		95	$\mu\text{A}$
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 10 \text{V}, I_D = 1 \mu\text{A}$		-1.2	-4.0	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 10 \text{V}, V_{GS} = 0 \text{V}, f = 1 \text{kHz}$	0.05	0.10		ms
Input Capacitance	$C_{iss}$	$V_{DS} = 10 \text{V}, V_{GS} = 0 \text{V}, f = 1 \text{MHz}$		1.7		pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = 10 \text{V}, V_{GS} = 0 \text{V}, f = 1 \text{MHz}$		0.7		pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL CHARACTERISTICS

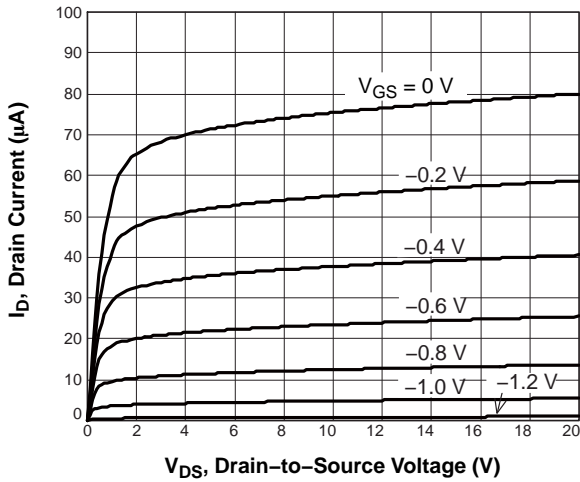


Figure 1. Drain Current vs. Drain-to-Source Voltage

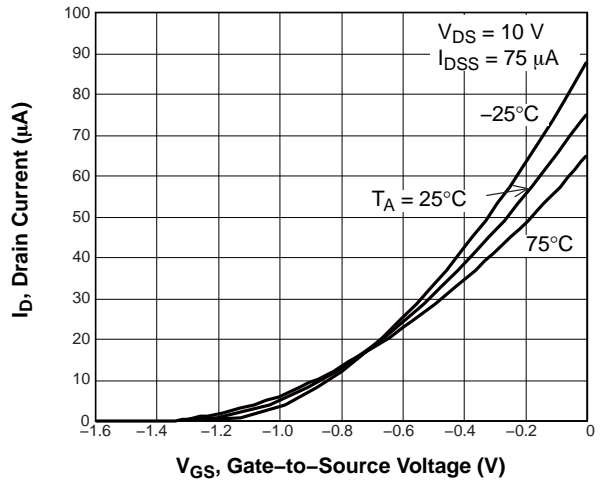


Figure 2. Drain Current vs. Gate-to-Source Voltage

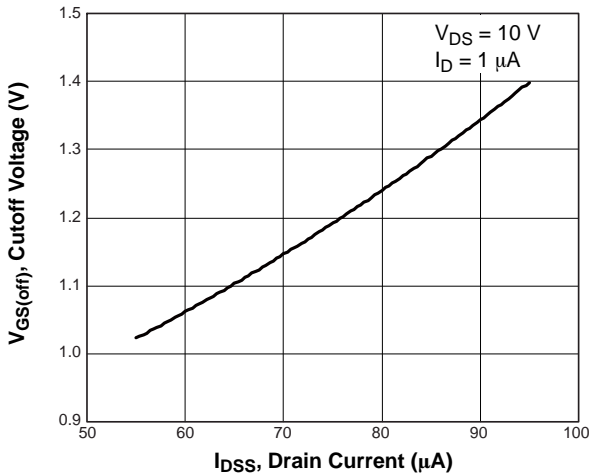


Figure 3. Cutoff Voltage vs. Drain Current

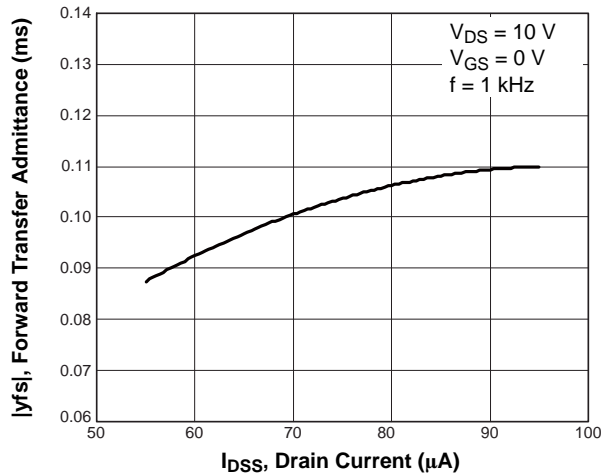


Figure 4. Forward Transfer Admittance vs. Drain Current

TYPICAL CHARACTERISTICS

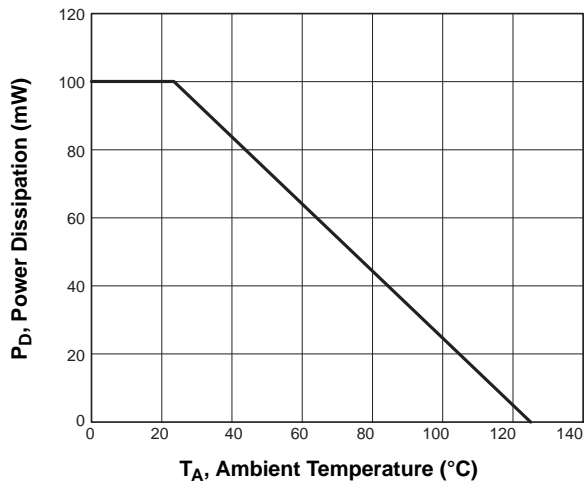


Figure 5. Power Dissipation vs. Ambient Temperature

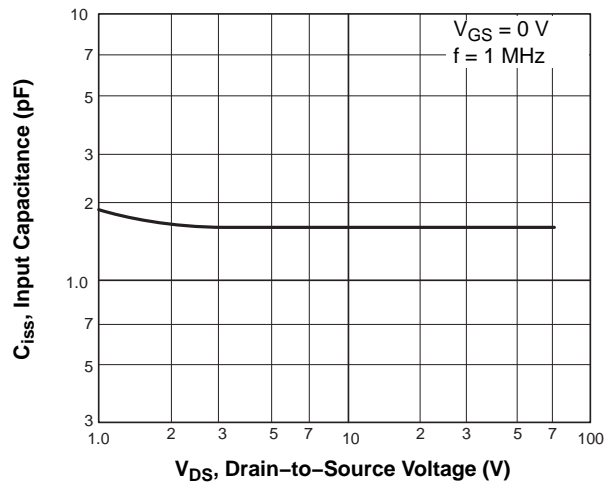


Figure 6. Input Capacitance vs. Drain-to-Source Voltage

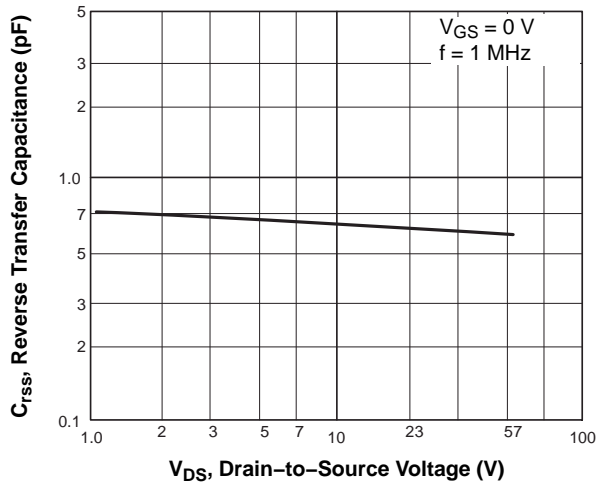


Figure 7. Reverse Transfer Capacitance vs. Drain-to-Source Voltage

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

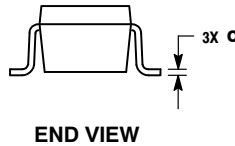
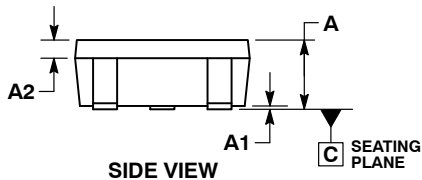
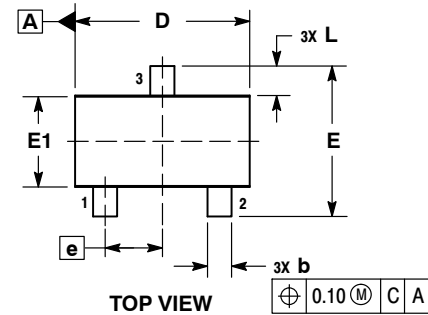
ON Semiconductor®



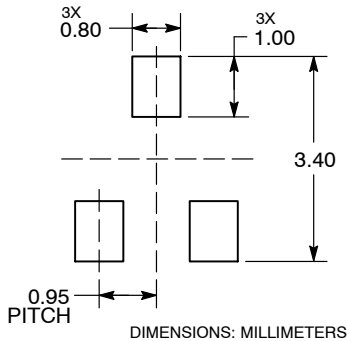
SCALE 2:1

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ISSUE O

DATE 09 JAN 2015



### RECOMMENDED SOLDERING FOOTPRINT\*

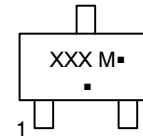


### NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.20 PER SIDE.
4. DIMENSIONS D AND E1 ARE MEASURED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY.
5. DIMENSIONS b AND c APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.10 AND 0.20 FROM THE TIP.

MILLIMETERS		
DIM	MIN	MAX
A	0.95	1.35
A1	0.00	0.10
A2	0.20	0.40
b	0.35	0.50
c	0.10	0.20
D	2.75	3.05
E	2.30	2.70
E1	1.35	1.65
e	0.95 BSC	
L	0.35	0.75

### GENERIC MARKING DIAGRAM



- XXX = Specific Device Code
- M = Date Code
- = Pb-Free Package

(Note: Microdot may be in either location)

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present.

\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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