Ordering number : EN2543A

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SK715 — N-Channel Junction Silicon FET

AM Tuner, RF Amplifier Applications

Applications

- AM tuner RF amp, low-noise amp
- HF low-noise amp

Features

- Adoption of FBET process
- Large |yfs|
- Small Ciss
- Very low noise figure

Specifications

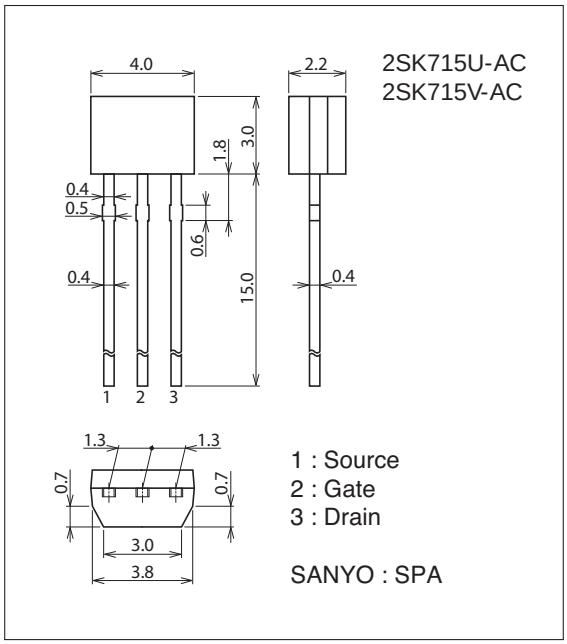
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		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		300	mW
Junction Temperature	Tj		125	°C
Storage Temperature	Tstg		−55 to +125	°C

Package Dimensions

unit : mm (typ)

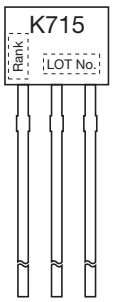
7524-005



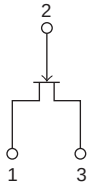
Product & Package Information

- Package : SPA
- JEITA, JEDEC : SC-72
- Minimum Packing Quantity : 2,500 pcs./box

Marking



Electrical Connection



Electrical Characteristics at Ta=25°C

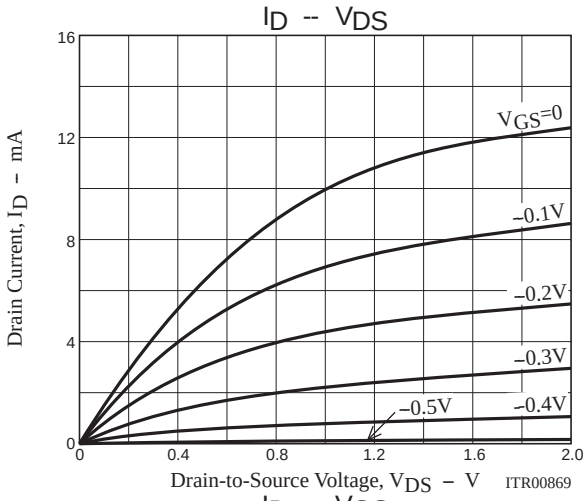
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	I_G=−10μA, V_{DS}=0V	−15			V
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=−10V, V_{DS}=0V			−1.0	nA
Zero-Gate Voltage Drain Current	I_{DSS}*	V_{DS}=5V, V_{GS}=0V	5.0*		24.0*	mA
Cutoff Voltage	V_{GS}(off)	V_{DS}=5V, I_D=100μA		−0.6	−1.4	V
Forward Transfer Admittance	| yfs |	V_{DS}=5V, V_{GS}=0V, f=1kHz	25	50		mS
Input Capacitance	Ciss			10		pF
Reverse Transfer Capacitance	Crss			3.0		pF
Noise Figure	NF	V_{DS}=5V, R_g=1kΩ, I_D=1mA, f=1kHz		1.5		dB

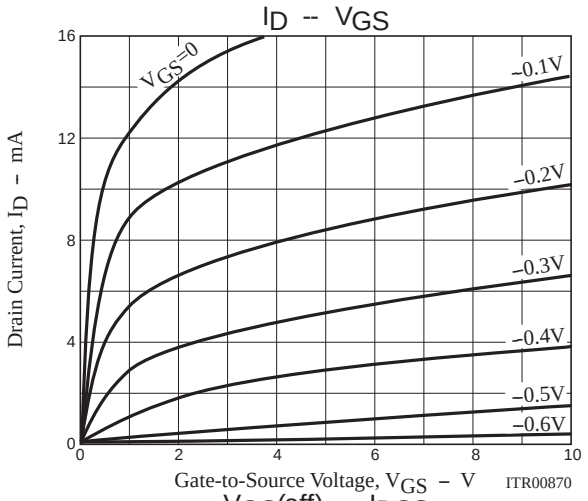
* : The 2SK715 is classified by I_{DSS} as follows : (unit : mA)

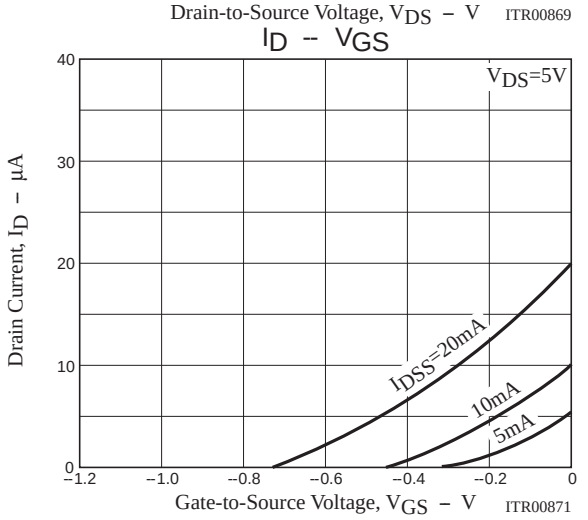
Rank	T	U	V	W
I_{DSS}	5.0 to 8.5	7.3 to 12.0	10.0 to 17.0	14.5 to 24.0

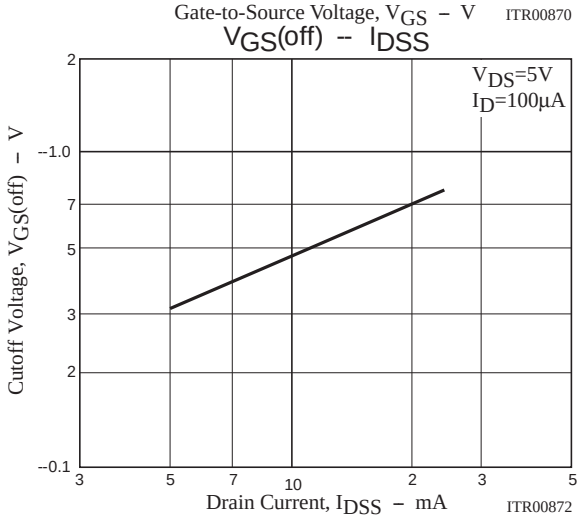
Ordering Information

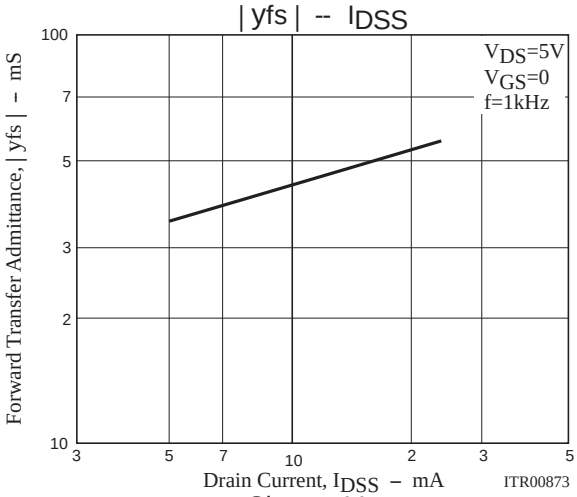
Device	Package	Shipping	memo
2SK715U-AC	SPA	2,500pcs./box	Pb Free
2SK715V-AC	SPA	2,500pcs./box	

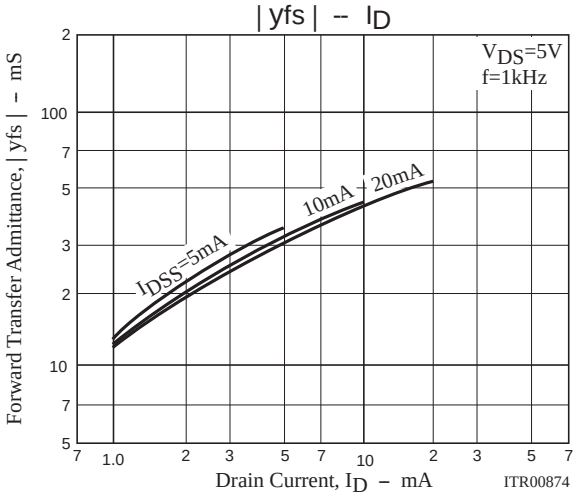


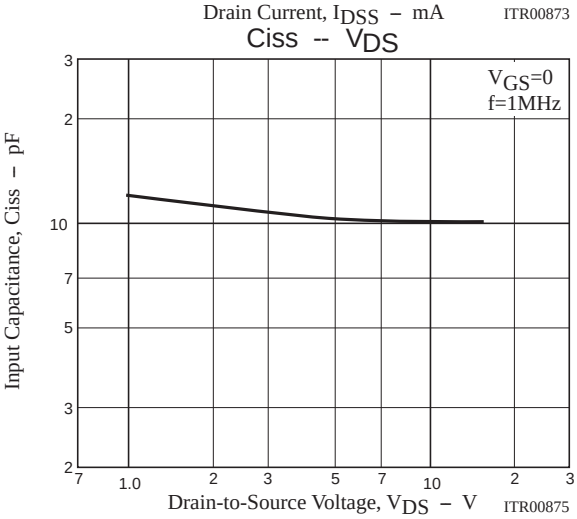


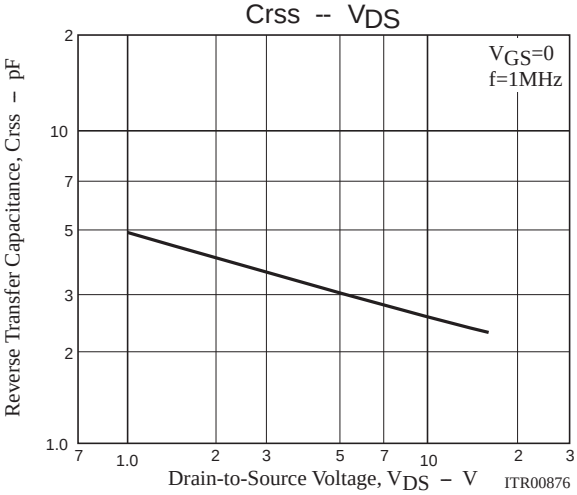


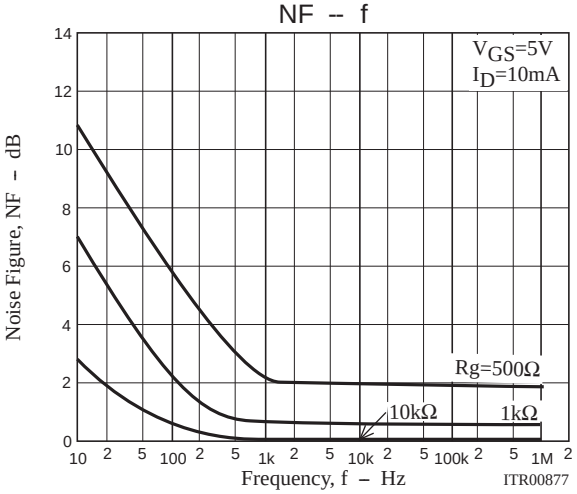


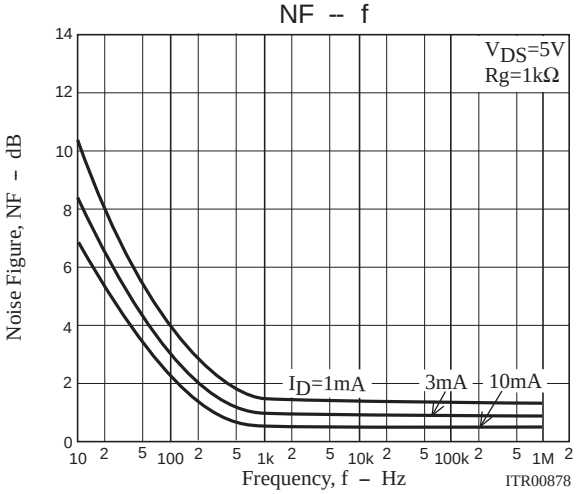

| yfs | -- IDSS
VDS=5V
VGS=0
f=1kHz
Forward Transfer Admittance, | yfs | – mS
Drain Current, IDSS – mA
ITR00873

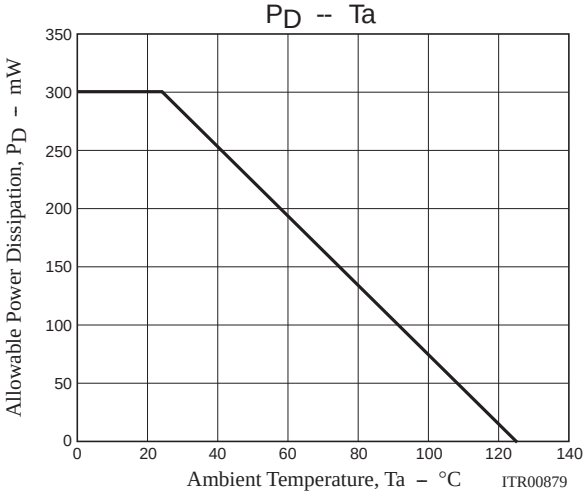

| yfs | -- ID
VDS=5V
f=1kHz
IDSS=5mA
10mA
20mA
Forward Transfer Admittance, | yfs | – mS
Drain Current, ID – mA
ITR00874


Ciss -- VDS
VGS=0
f=1MHz
Input Capacitance, Ciss – pF
Drain-to-Source Voltage, VDS – V
ITR00875


Crss -- VDS
VGS=0
f=1MHz
Reverse Transfer Capacitance, Crss – pF
Drain-to-Source Voltage, VDS – V
ITR00876


NF -- f
VGS=5V
ID=10mA
Rg=500Ω
10kΩ
1kΩ
Noise Figure, NF – dB
Frequency, f – Hz
ITR00877


NF -- f
VDS=5V
Rg=1kΩ
ID=1mA
3mA
10mA
Noise Figure, NF – dB
Frequency, f – Hz
ITR00878


PD -- Ta
Allowable Power Dissipation, PD – mW
Ambient Temperature, Ta – °C
ITR00879

Taping Specification

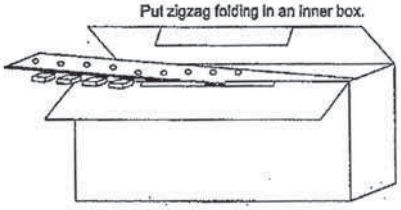
2SK715U-AC, 2SK715V-AC

Storage package Outline name	Package type	Maximum Number of devices contained(pcs.) Inner box No.	Storage quantity	Packing format Outer box (C—6)	Outer box (C—8)
SPA	A C	C—2 Inner box Dimensions :mm(external) 330×45×145	2,500	16 inner boxes contained(40,000pcs.) Outer box Dimensions:mm(external) 585×345×200	8 inner boxes contained(20,000pcs.) Outer box Dimensions:mm(external) 345×300×200
	A L	C—2 Inner box Dimensions :mm(external) 330×45×145	2,400	16 inner boxes contained(38,400pcs.) Outer box Dimensions:mm(external) 585×345×200	8 inner boxes contained(19,200pcs.) Outer box Dimensions:mm(internal) 345×300×200
	A P	C—4 Inner box Dimensions :mm(external) 330×45×285	5,000	8 inner boxes contained(40,000pcs.) Outer box Dimensions:mm(external) 585×345×200	4 inner boxes contained(20,000pcs.) Outer box Dimensions:mm(internal) 345×300×200
	A S	C—2 Inner box Dimensions :mm(external) 330×45×145	1,200	16 inner boxes contained(19,200pcs.) Outer box Dimensions:mm(external) 585×345×200	8 inner boxes contained(9,600 pcs.) Outer box Dimensions:mm(internal) 345×300×200

1. Packing format

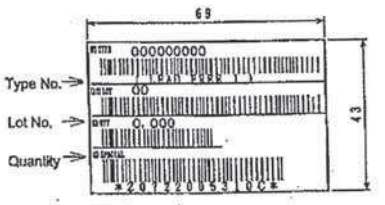
Packing method

Put zigzag folding in an inner box.



Sample bar code label

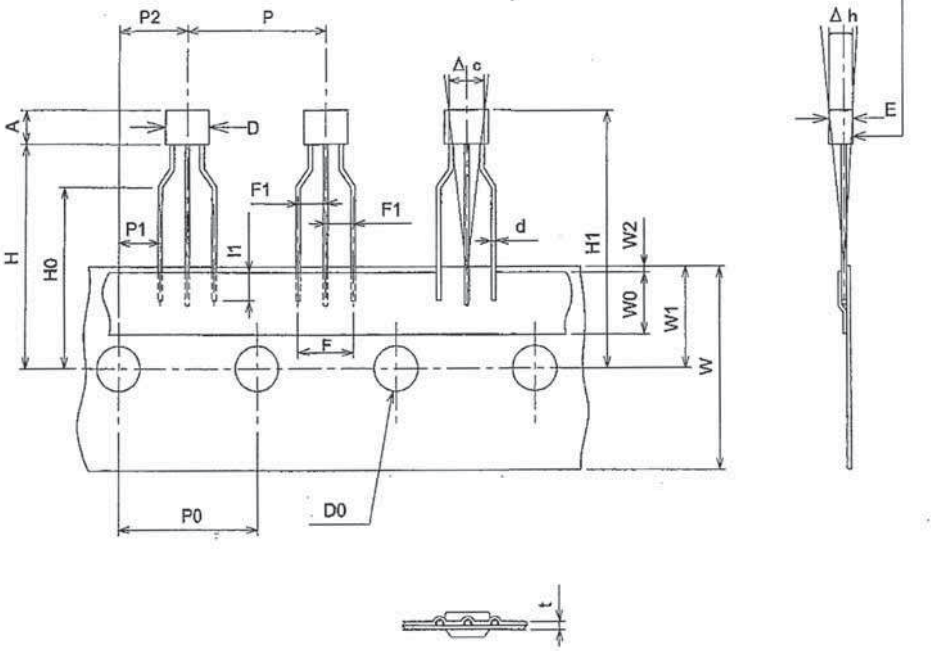
(Unit : mm)



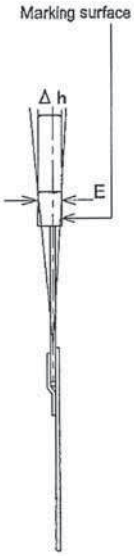
*LEAD FREE 1 :
Lead-free external terminal surface treatment product.

2. Taping specifications

2—1. Carrier tape size (Unit:mm)



Marking surface



2 — 2. Taping size standard

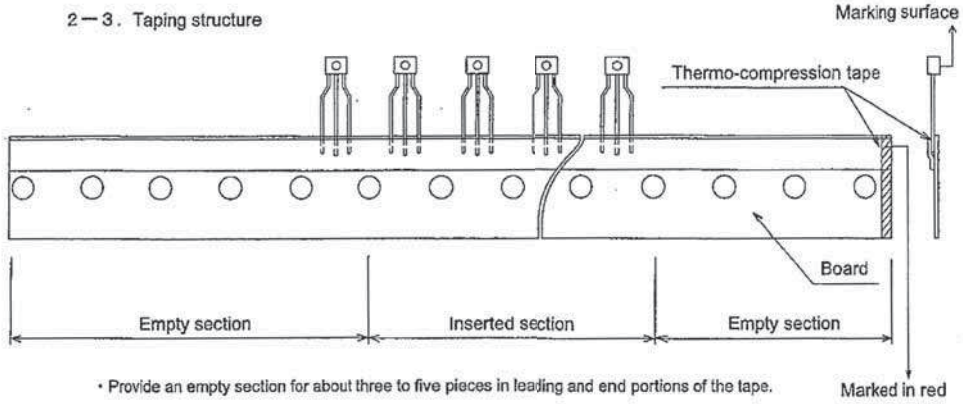
Unit:mm

Item	Symbol	Standard	Tolerance
Work piece outside diameter	D	4.0	±0.2
	E	2.2	±0.2
Work piece height	A	3.0	±0.2
Lead wire diameter	d	0.4×0.4 t	±0.1
Bonded lead wire	l1	2.5MIN	
Pitch between products	P	12.7	±1.0
Pitch between perforations	P0	12.7	±0.2
Total pitch for 21 perforations	P0×20	254.0	±1.0
Distance between lead wire	F	5.0	+0.8 -0.2
Lead wire pitch distance	F1	2.5	+0.4 -0.1
Product inclination	Δ h	0	±2.0
Displacement of perforations	P1	3.85	±0.3
	P2	6.35	±0.3
Displacement of tape	W2	0.5MAX	

Item	Symbol	Standard	Tolerance	
Tape width	W	18.0	+1.0 -0.5	
Adhesive tape	W0	6.0	±1.0	
Displacement of perforations	W1	9.0	+0.75 -0.5	
Work piece bottom surface position	H	19.8	+1.0 -0.3	
Lead wire clinch height	H0	16.0	±0.5	
Work piece upper limit position	H1	22.8	±1.5	
Perforations diameter	D0	φ4.0	±0.2	
Tape thickness (total thickness)	t	0.6	±0.2	
Product inclination	Δ c	0	±1.0	To be measured at a position below the clinch

Not to be displaced to the outside of the board

2 — 3. Taping structure



- Provide an empty section for about three to five pieces in leading and end portions of the tape.
- Provide marking in red to the E-side end of the board.

Outline Drawing

2SK715U-AC, 2SK715V-AC