

XP8081

Silicon N-channel junction FET (Tr1)
Silicon NPN epitaxial planer transistor (Tr2)

For analog switching (Tr1)/switching (Tr2)

■ Features

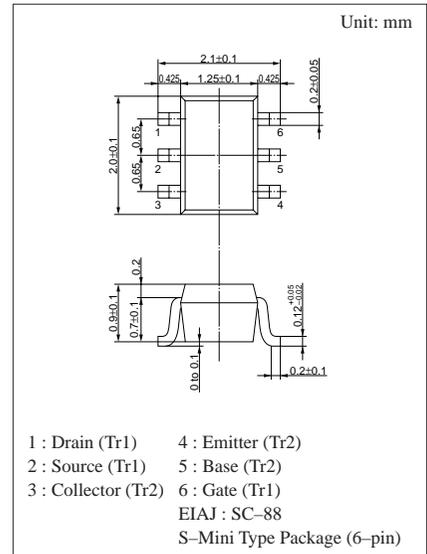
- Two elements incorporated into one package.
- Reduction of the mounting area and assembly cost by one half.

■ Basic Part Number of Element

- 2SK1103+UN1213 (transistors with built-in resistor)

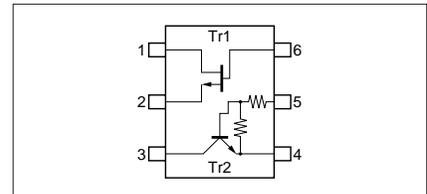
■ Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Ratings	Unit
Tr1	Gate to drain voltage	V_{GDS}	-50	V
	Drain current	I_D	20	mA
	Gate current	I_G	10	mA
Tr2	Collector to base voltage	V_{CBO}	50	V
	Collector to emitter voltage	V_{CEO}	50	V
	Collector current	I_C	100	mA
Overall	Total power dissipation	P_T	150	mW
	Junction temperature	T_j	150	°C
	Storage temperature	T_{stg}	-55 to +150	°C



Marking Symbol: 9Z

Internal Connection



■ Electrical Characteristics (T_a=25°C)

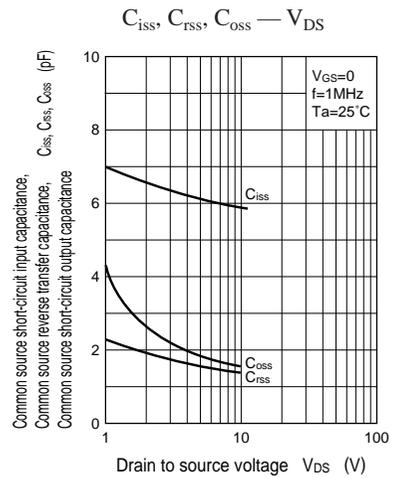
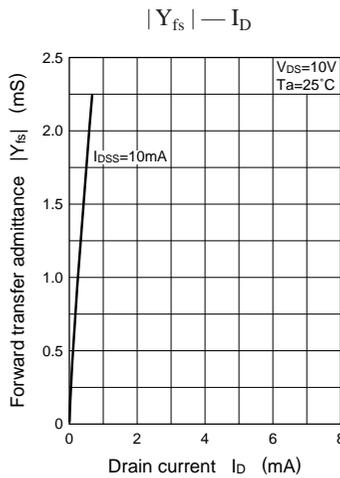
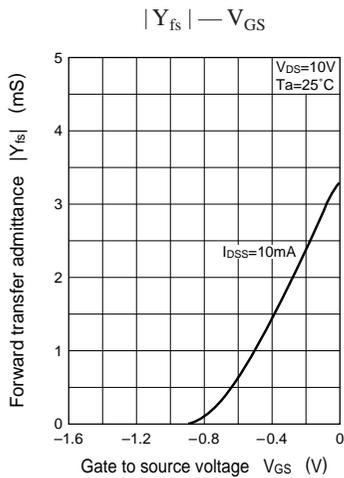
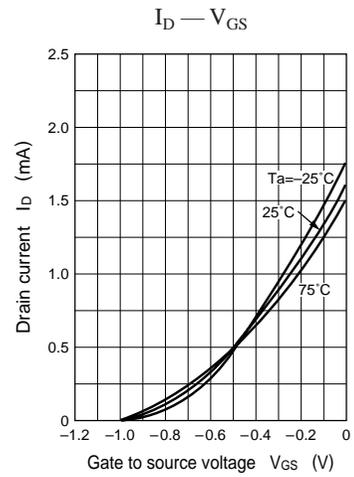
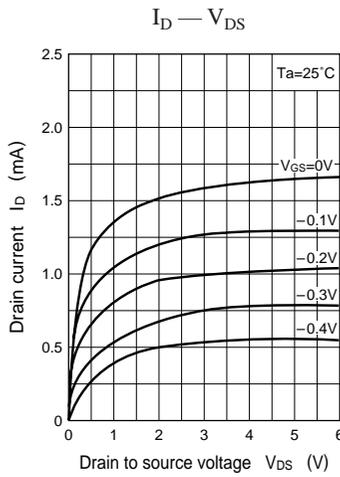
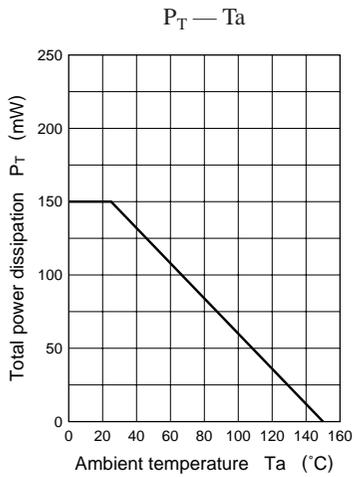
● Tr1

Parameter	Symbol	Conditions	min	typ	max	Unit
Gate to drain voltage	V _{GDS}	I _G = -10μA, V _{DS} = 0	-50			V
Drain current	I _{DSS}	V _{DS} = 10V, V _{GS} = 0	0.2		2.2	mA
Gate cutoff current	I _{GSS}	V _{GS} = -30V, V _{DS} = 0			-10	nA
Gate to source cutoff voltage	V _{GSC}	V _{DS} = 10V, I _D = 10μA			-1.0	V
Mutual conductance	gm	V _{DS} = 10V, I _D = 1mA, f = 1kHz	1.8	2.5		mS
Drain resistance	R _{DS(on)}	V _{DS} = 10mV, V _{GS} = 0		400		Ω
Common source short-circuit input capacitance	C _{iss}	V _{DS} = 10V, V _{GS} = 0, f = 1MHz		7		pF
Common source reverse transfer capacitance	C _{rss}	V _{DS} = 10V, V _{GS} = 0, f = 1MHz		1.5		pF
Common source short-circuit output capacitance	C _{oss}	V _{DS} = 10V, V _{GS} = 0, f = 1MHz		1.5		pF

● Tr2

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V _{CBO}	I _C = 10μA, I _E = 0	50			V
Collector to emitter voltage	V _{CEO}	I _C = 2mA, I _B = 0	50			V
Collector cutoff current	I _{CBO}	V _{CB} = 50V, I _E = 0			0.1	μA
	I _{CEO}	V _{CE} = 50V, I _B = 0			0.5	μA
Emitter cutoff current	I _{EBO}	V _{EB} = 6V, I _C = 0			0.1	mA
Forward current transfer ratio	h _{FE}	V _{CE} = 10V, I _C = 5mA	80			
Collector to emitter saturation voltage	V _{CE(sat)}	I _C = 10mA, I _B = 0.3mA			0.25	V
Output voltage high level	V _{OH}	V _{CC} = 5V, V _B = 0.5V, R _L = 1kΩ	4.9			V
Output voltage low level	V _{OL}	V _{CC} = 5V, V _B = 3.5V, R _L = 1kΩ			0.2	V
Transition frequency	f _T	V _{CB} = 10V, I _E = -1mA, f = 200MHz		150		MHz
Input resistance	R _I		-30%	47	+30%	kΩ
Resistance ratio	R ₁ /R ₂		0.8	1.0	1.2	

Common characteristics chart



Characteristics charts of Tr2

