

XP8081

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

For analog switching (Tr1)/switching (Tr2)

■ Features

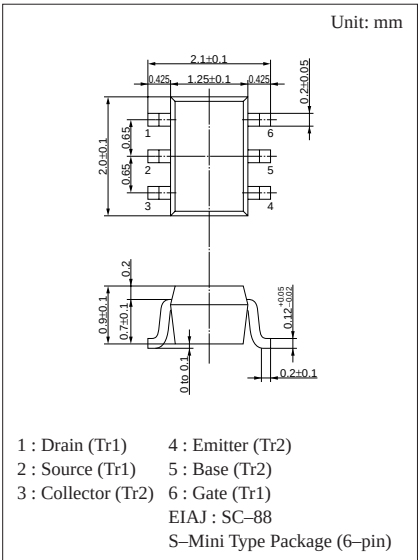
- Two elements incorporated into one package.
- Reduction of the mounting area and assembly cost by one half.

■ Basic Part Number of Element

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

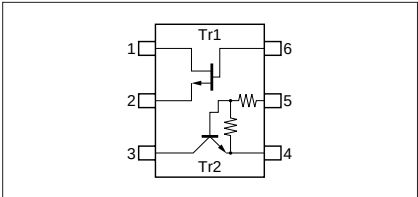
■ Absolute Maximum Ratings (Ta=25°C)

	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_{sig}	-55 to +150	°C



Marking Symbol: 9Z

Internal Connection



■ Electrical Characteristics (Ta=25°C)

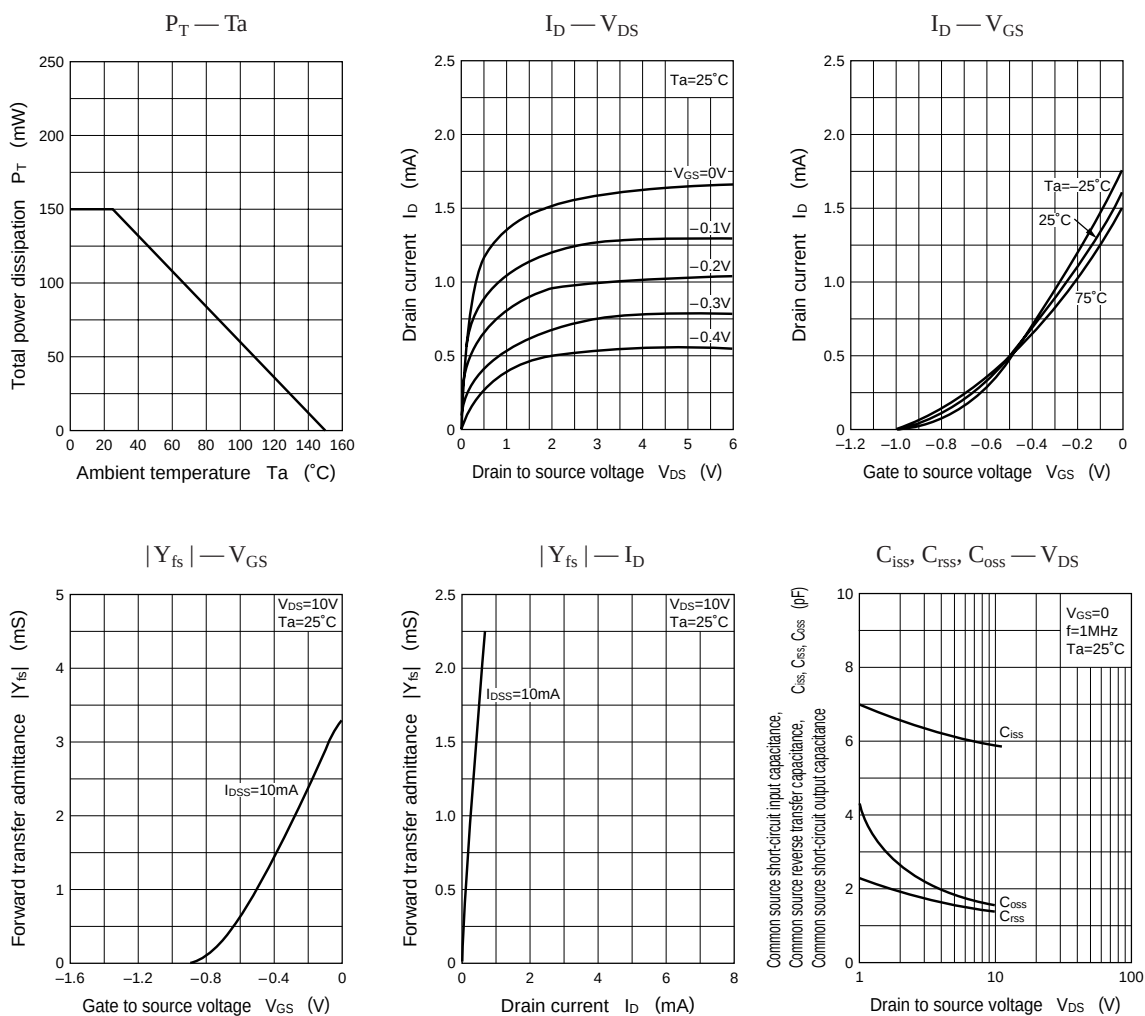
● Tr1

Parameter	Symbol	Conditions	min	typ	max	Unit
Gate to drain voltage	V_{GDS}	$I_G = -10\mu A, V_{DS} = 0$	-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}	$V_{DS} = 10V, I_D = 10\mu A$			-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}	$I_C = 10\mu A, I_E = 0$	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}	$V_{CC} = 5V, V_B = 0.5V, R_L = 1k\Omega$	4.9			V
Output voltage low level	V_{OL}	$V_{CC} = 5V, V_B = 3.5V, R_L = 1k\Omega$			0.2	V
Transition frequency	f_T	$V_{CB} = 10V, I_E = -1mA, f = 200MHz$		150		MHz
Input resistance	R_1		-30%	47	+30%	k Ω
Resistance ratio	R_1/R_2		0.8	1.0	1.2	

Common characteristics chart



Characteristics charts of Tr2

