

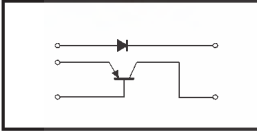
Low-frequency transistor

UML1N

●Features

- 1) The 2SA1037AK and a diode are housed independently in a UMT package.

●Circuit diagram



●Package, marking, and packaging specifications

Part No.	UML1N
Package	UMT5
Marking	L1
Code	TR
Basic ordering unit (pieces)	3000

●Electrical characteristics (Ta = 25°C)

Tr						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BV_{CE0}	-50	—	—	V	$I_C = -1\text{mA}$
Collector-base breakdown voltage	BV_{CB0}	-60	—	—	V	$I_C = -50\ \mu\text{A}$
Emitter-base breakdown voltage	BV_{EB0}	-6	—	—	V	$I_E = -50\ \mu\text{A}$
Collector cutoff current	I_{CBO}	—	—	-0.1	μA	$V_{CB} = -60\text{V}$
Emitter cutoff current	I_{EBO}	—	—	-0.1	μA	$V_{EB} = -5\text{V}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	-0.5	V	$I_C/I_E = -50\text{mA}/-5\text{mA}$
DC current transfer ratio	h_{FE}	120	—	560	—	$V_{CE} = -6\text{V}, I_C = -1\text{mA}$
Transition frequency	f_T	—	140	—	MHz	$V_{CE} = -12\text{V}, I_E = -2\text{mA}, f = 100\text{MHz}$
Output capacitance	C_{ob}	—	4	5	pF	$V_{CE} = -12\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$

Di						
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_F	—	—	1.2	V	$I_F = 100\text{mA}$
Reverse current	I_R	—	—	0.1	μA	$V_R = 70\text{V}$
Capacitance between terminals	C_T	—	—	3.5	pF	$V_R = 6\text{V}, f = 1\text{MHz}$
Reverse recovery time	t_{rr}	—	—	4	ns	$V_R = 6\text{V}, I_F = 5\text{mA}, R_L = 50\ \Omega$

●Absolute maximum ratings (Ta = 25°C)

Tr			
Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	-60	V
Collector-emitter voltage	V_{CE0}	-50	V
Emitter-base voltage	V_{EB0}	-6	V
Collector current	I_C	-0.15	A
Collector power dissipation	P_C	0.15	W
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	-55~+150	°C

Di			
Parameter	Symbol	Limits	Unit
DC reverse voltage	V_R	80	V
Peak reverse voltage	V_{RM}	80	V
Mean rectifying current	I_O	0.1	A
Peak forward voltage	I_{FM}	0.3	A
Surge current	I_{surge}	4	A
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	-55~+150	°C
Specified I/O frequencies	f	100	MHz

