

## Digital Transistors (Built-in Resistors)

### UML2N Isolated Transistor and Diode

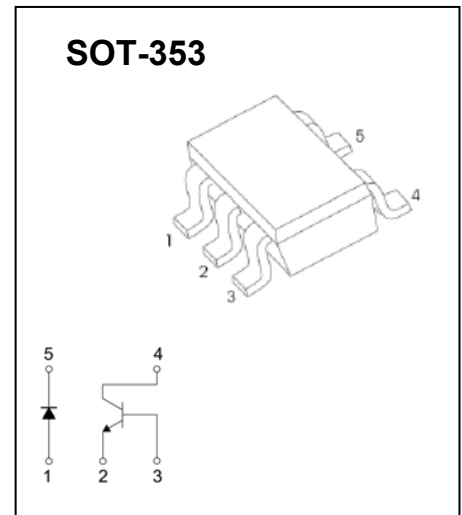
#### Features

- The 2SC2412K and a diodes are housed independently In a package

**MARKING: L2**

#### TR MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
$V_{CB0}$	Collector-Base Voltage	60	V
$V_{CE0}$	Collector-Emitter Voltage	50	V
$V_{EB0}$	Emitter-Base Voltage	6	V
$I_c$	Collector Current -Continuous	150	mA
$P_c$	Collector Power Dissipation	150	mW
$T_J, T_{stg}$	Operation Junction and Storage Temperature Range	-55 ~+150	$^\circ\text{C}$



#### DIO Maximum Ratings and Electrical Characteristics, Single Diode @ $T_a=25^\circ\text{C}$

Parameter	Symbol	Limits	Unit
DC reverse voltage	$V_R$	80	V
Peak Reverse Voltage	$V_{RM}$	80	V
Forward Continuous Current	$I_{FM}$	300	mA
Average Rectified Output Current	$I_O$	100	mA
Surge current	$I_{SURGE}$	4	A
Operation Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	$^\circ\text{C}$

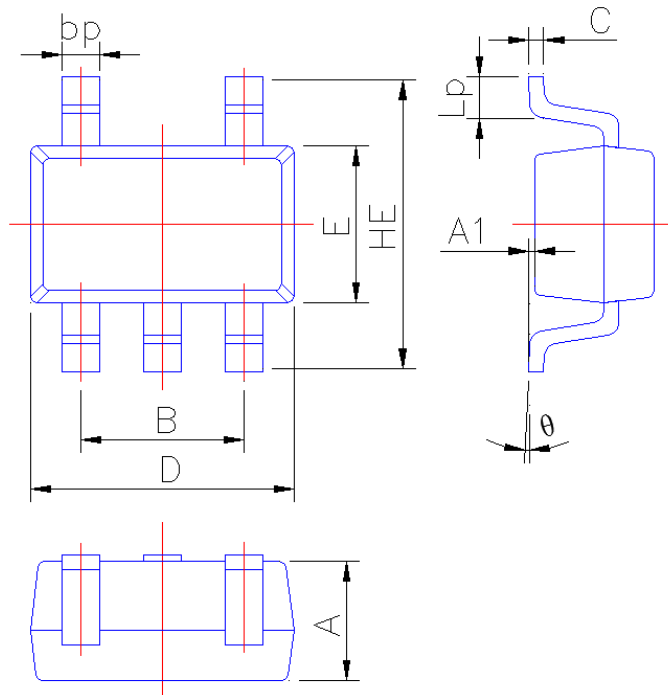
## TR ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=50\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=50\mu A, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=60V, I_E=0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			0.1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE}=6V, I_C=1mA$	120		560	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50mA, I_B=5mA$			0.4	V
Transition frequency	$f_T$	$V_{CE}=12V, I_C=2mA, f=100MHz$		180		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=12V, I_E=0, f=1MHz$			3.5	pF

## DIO Electrical Ratings @Ta=25°C

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

## SOT-353 Package Outline Dimensions



Symbol	Dimension in Millimeters	
	Min	Max
A	0.90	1.00
A1	0.010	0.100
B	1.20	1.40
bp	0.25	0.45
C	0.09	0.15
D	2.00	2.20
E	1.15	1.35
HE	2.15	2.55
Lp	0.25	0.46
θ	0°	6°