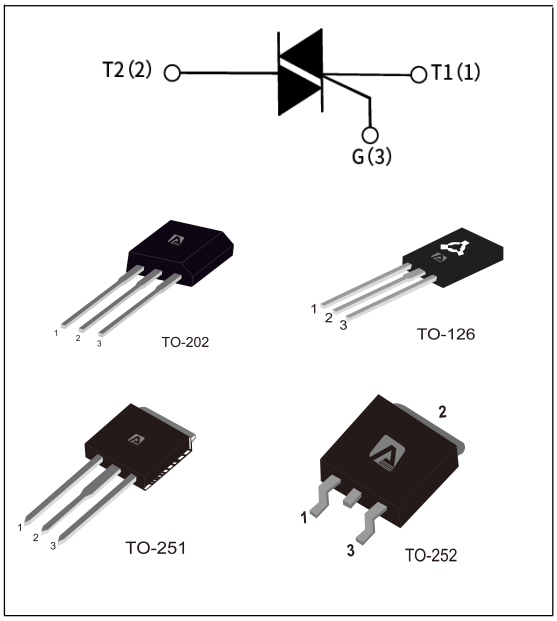
Z0405 Serial Standard TRIACS

GENERAL DESCRIPTION:

The Z0405 series is suitable for general purpose AC switching applications.They can be found in applications such as home appliances (electrovalve,pump,door lock,small lampcontrol),fan speed controllers



Main Features:

$I_{T(RMS)}$	V_{DRM}/V_{RRM}	V_{TM}
4 A	600V and 800 V	≤2 V

Absolute Ratings(limiting values) :

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)	TO-251/252 (T_C=80℃)	4	A
		TO-126/ 202 (T_C=75℃)		
I_{TSM}	Non repetitive surge peak on-state current (full cycle, Tj initial = 25°C)	F = 50 Hz t = 20 ms	20	A
		F = 60 Hz t = 16.7 ms	21	
Tstg	Storage junction temperature range		- 40 to + 150	°C
Tj	Operating junction temperature range		- 40 to + 125	
I^2t	I^2t value for fusing	tp = 10 ms	2.2	A^2s
dI/dt	Critical rate of rise of on-state current I_G =2 x I_{GT} , tr ≤ 100 ns	F = 120 Hz Tj=125°C	20	A/µs
I_{GM}	Peak gate current	tp = 20 µs Tj = 125°C	1.2	A
$P_{G(AV)}$	Average gate power dissipation	Tj = 125°C	0.2	W

Electrical Characteristics : (Tj = 25° C, unless otherwise specified)

Symbol	Test Condition	Quadrant	Range	Z04				Unit
				02	05	09	10	
I_{GT}(1)	V_D=12V R_L=33Ω	I-II-III-IV	MAX	3	5	10	25	mA
V_{GT}		ALL	MAX	1.3				V
V_{GD}	V_D=V_{DRM} R_L=3.3kΩ T_j=125°C	ALL	MIN	0.2				V
I_L	I_G=1.2 I_{GT}	I-III-IV	MAX	6	5	15	25	mA
		II		12	10	25	25	
I_H(2)	I_T= 50mA		MAX	3	5	10	25	mA
dV/dt(2)	V_D=6%V_{DRM} Gate Open T_j=110°C		MIN	10	20	100	200	V/μs
(dV/dt)c(2)	(dI/dt)c =1.8A/ms T_j =110°C		MIN	0.5	1	2	5	V/μs

1. minimum I_{GT} is guaranted at 5% of I_{GT} max.

2. for both polarities of A2 referenced to A1.

Static Characteristics

Symbol	Parameter		Value(MAX)	Unit
V_{TM}1	I_{TM}= 5.5A tp= 380μs	T_j=25°C	2.0	V
V_{to}(1)	Threshold voltage	T_j=125°C	0.95	V
R_d(1)	Dynamic resistance	T_j=125°C	180	mΩ
I_{DRM} I_{RRM}	V_D=V_{DRM} ,V_R=V_{RRM}	T_j=25°C	5	μ A
		T_j=125°C	0.5	mA

1. for both polarities of A2 referenced to A1.

Thermal Resistances :

Symbol	Param		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-251/252	6.5	℃/W
		TO-202/126	7.2	

FIG.1: Maximum power dissipation versus RMS on-state current

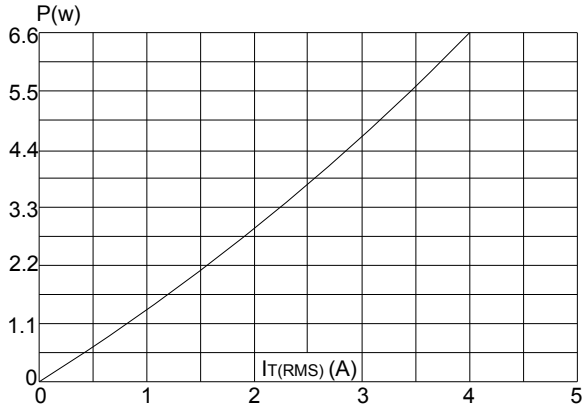


FIG.2: RMS on-state current versus case temperature

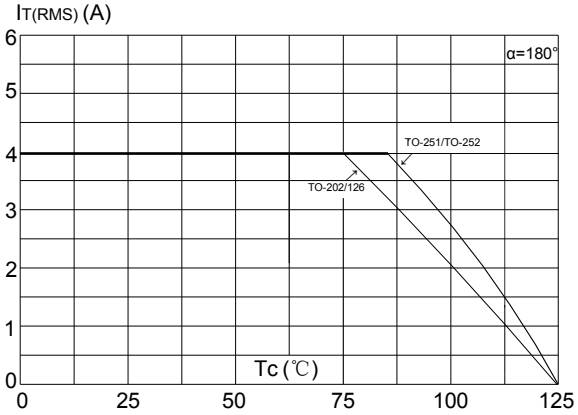


FIG.3: Surge peak on-state current versus number of cycles

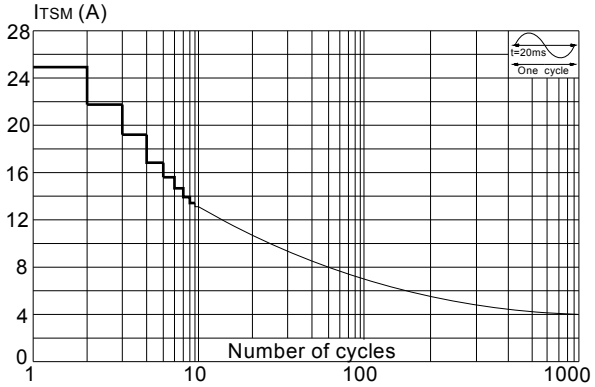


FIG.4: On-state characteristics (maximum values)

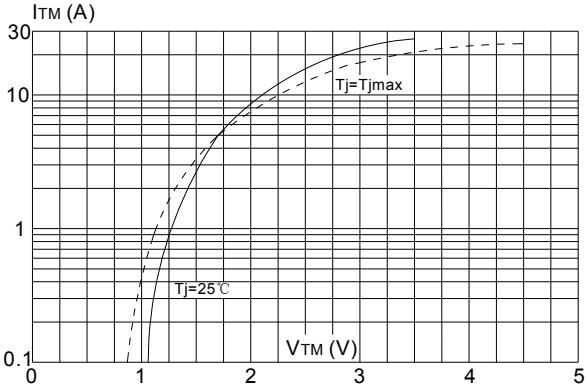


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms and corresponding value of I^2t (Ⅰ-Ⅱ-Ⅲ:dI/dt < 50A/μs; Ⅳ:dI/dt < 10A/μs)

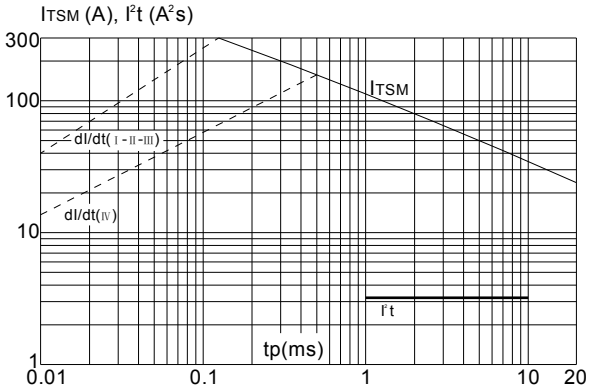


FIG.6: Relative variations of gate trigger current versus junction temperature

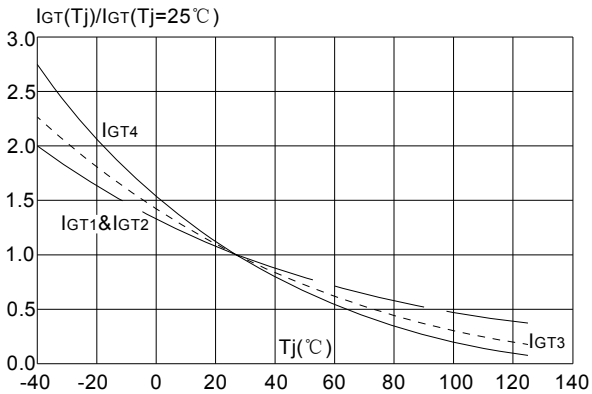


FIG.7: Relative variations of holding current versus junction temperature

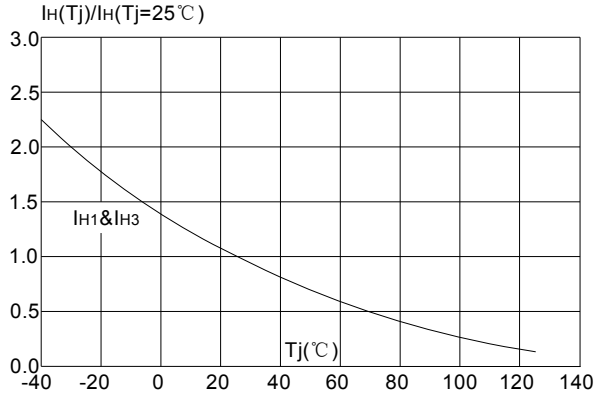
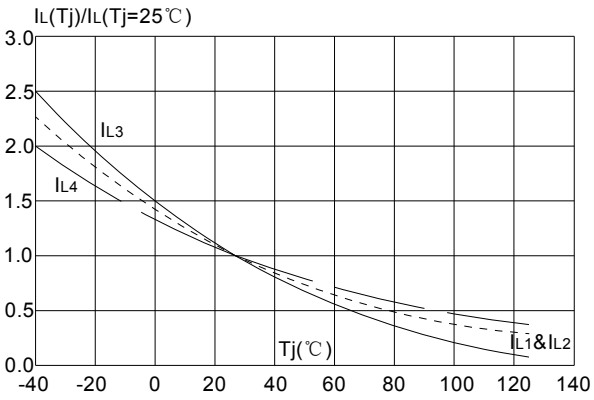
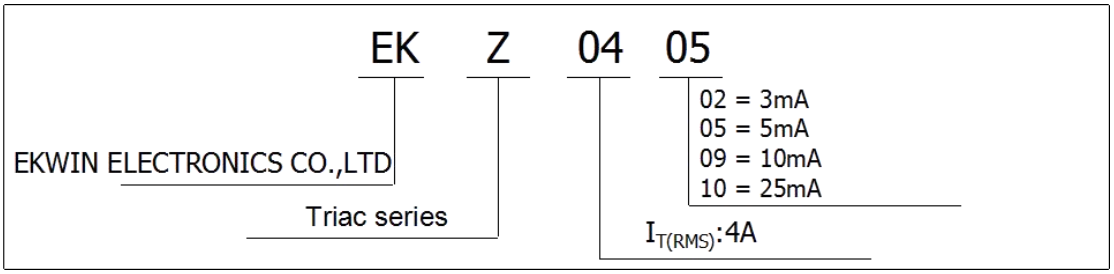


FIG.8: Relative variations of latching current versus junction temperature

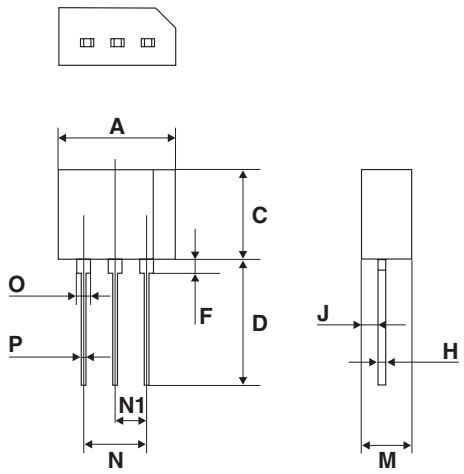


Ordering Information:

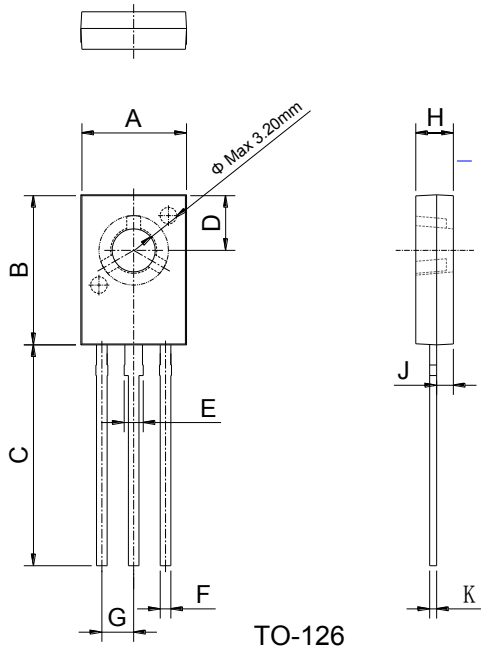


Package Mechanical Data :

TO202-3

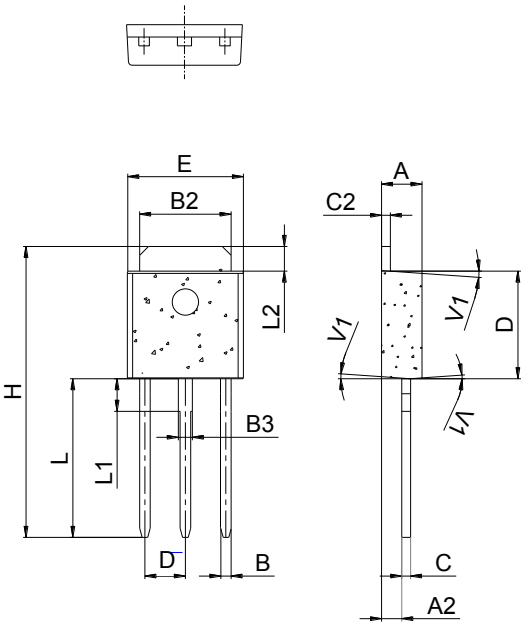


REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			10.1			0.398
C		7.3			0.287	
D		10.5			0.413	
F			1.5			0.059
H		0.51			0.020	
J		1.5			0.059	
M		4.5			0.177	
N			5.3			0.209
N1		2.54			0.100	
O			1.4			0.055
P			0.7			0.028



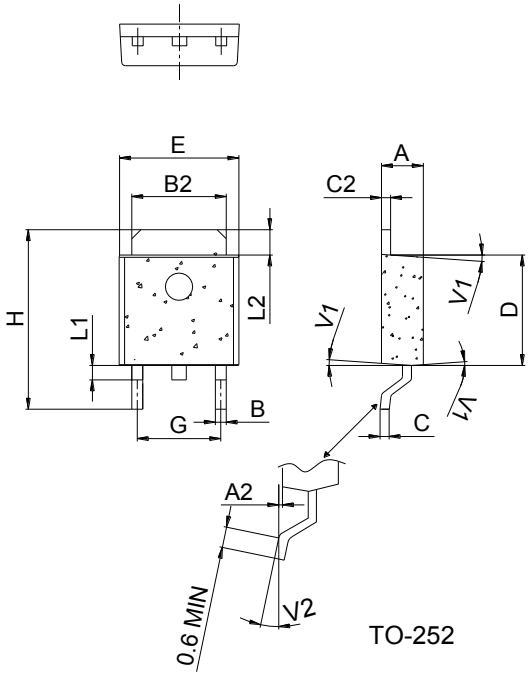
TO-126

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.40		7.80	0.291		0.307
B	10.6		11.2	0.417		0.441
C	15.3		16.3	0.602		0.642
D	3.90		4.10	0.154		0.161
E	1.17		1.47	0.046		0.058
F	0.66		0.86	0.026		0.034
G		2.29			0.090	
H	2.50		2.90	0.098		0.114
J	1.10		1.50	0.043		0.059
K	0.45		0.60	0.018		0.024



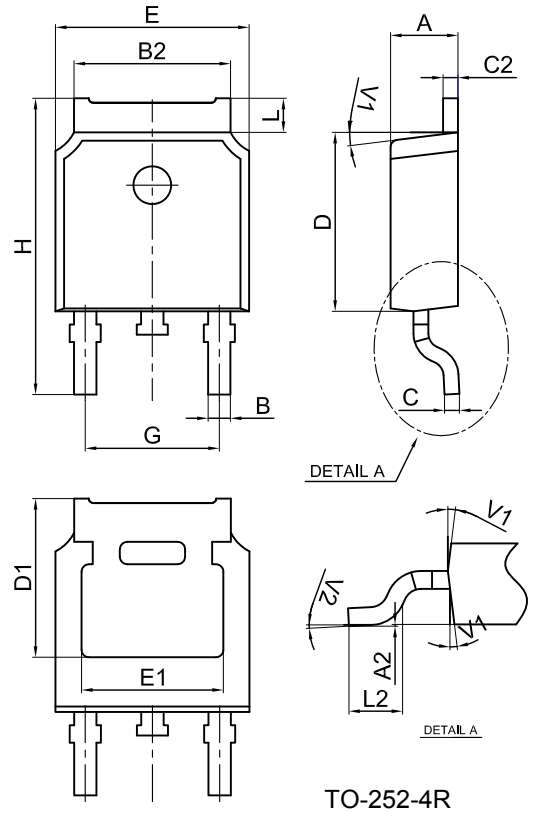
TO-251

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
V1		4°			4°	



TO-252

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G	4.40		4.70	0.173		0.185
H	9.35		10.6	0.368		0.417
L1	1.30		1.70	0.051		0.067
L2	1.37		1.50	0.054		0.059
V1		4°			4°	
V2	0°		8°	0°		8°



TO-252-4R

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2	0°		6°	0°		6°