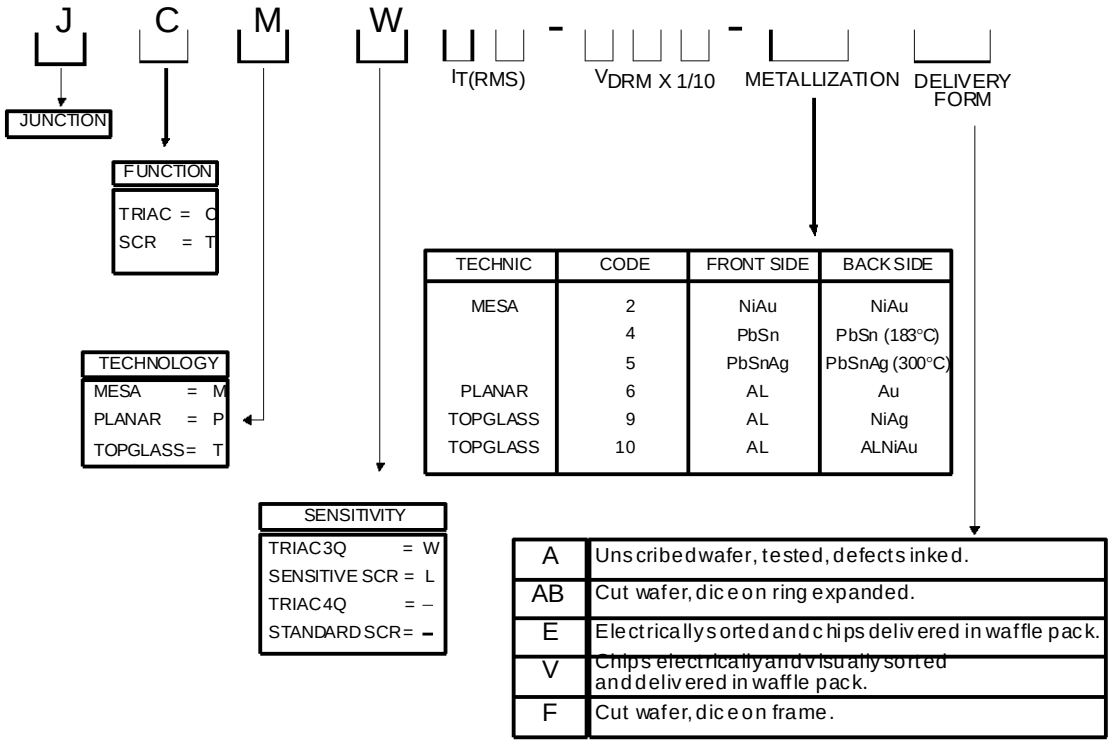
SGS-THOMSON MICROELECTRONICS

SCR's AND TRIACS

DICE

January 1995

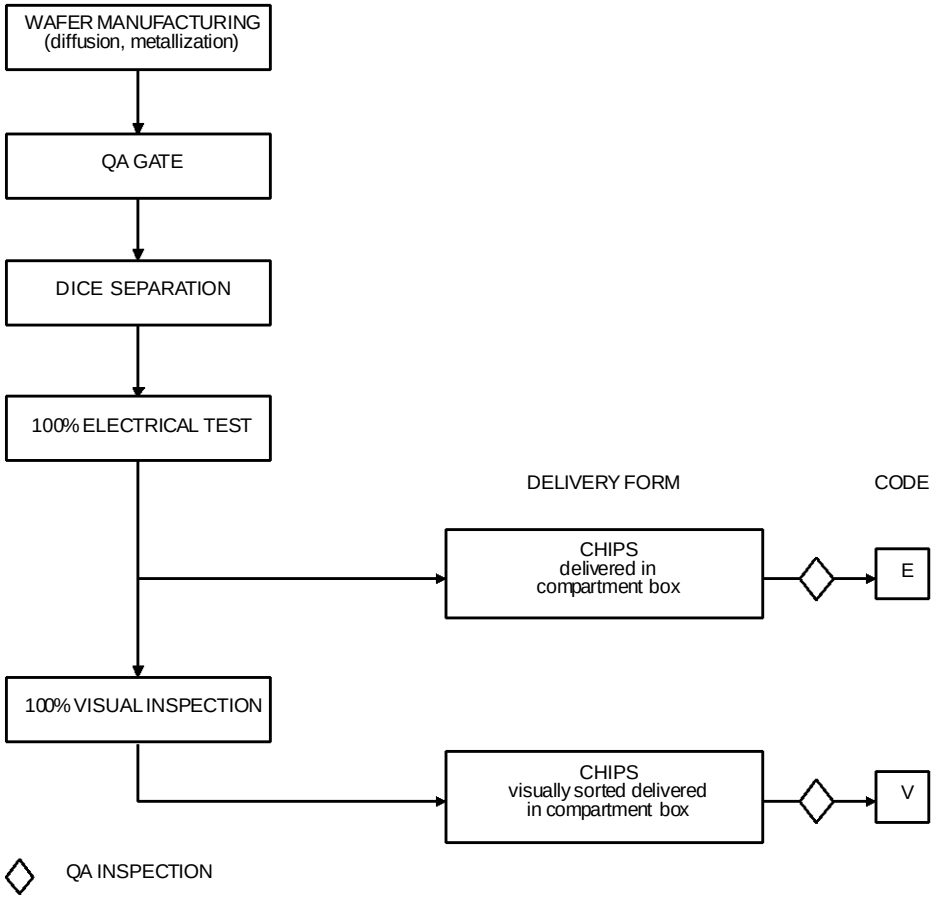
NEW CODIFICATION



TECHNIC	CODE	FRONT SIDE	BACK SIDE
MESA	2	NiAu	NiAu
	4	PbSn	PbSn (183°C)
	5	PbSnAg	PbSnAg (300°C)
PLANAR	6	AL	Au
TOPGLASS	9	AL	NiAg
TOPGLASS	10	AL	ALNiAu

A	Unscribed wafer, tested, defects inked.
AB	Cut wafer, dice on ring expanded.
E	Electrically sorted and chips delivered in waffle pack.
V	Chips electrically and visually sorted and delivered in waffle pack.
F	Cut wafer, dice on frame.

MESA TECHNOLOGY

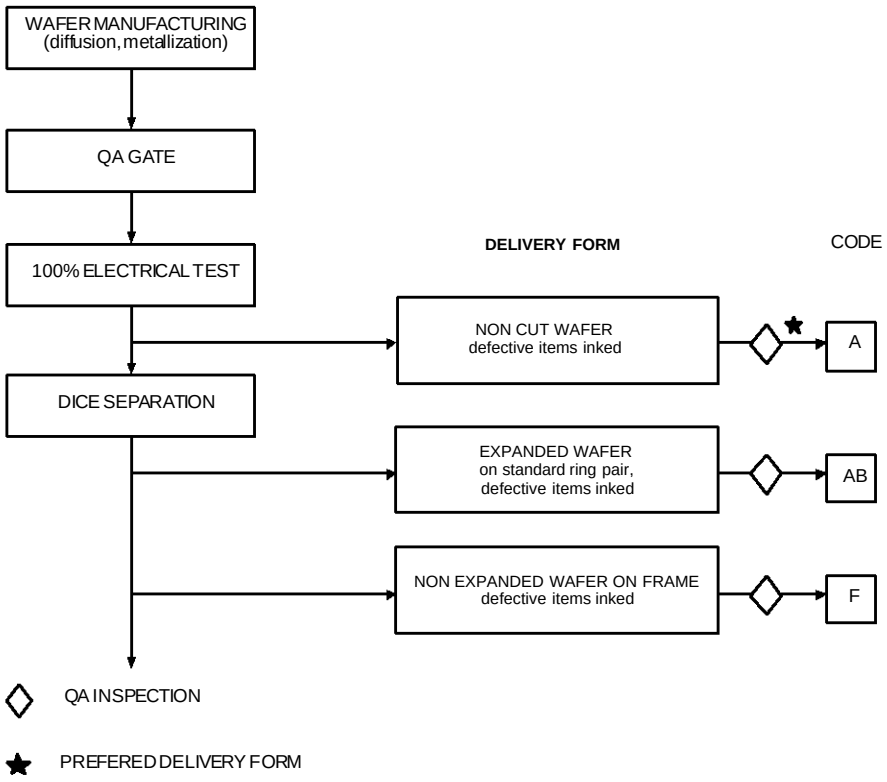


QA inspection is done through sampling for all batches :

SUBGROUP	SAMPLING LEVEL	AQL
VISUAL / MECHANICAL	II	0.40
ELECTRICAL AT 25°C	II	0.40

MANUFACTURING FLOW CHART

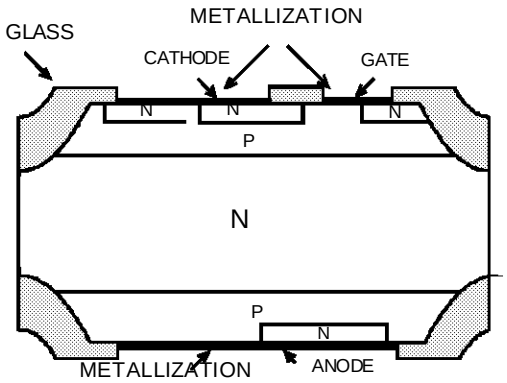
PLANAR AND TOPGLASS TECHNOLOGIES



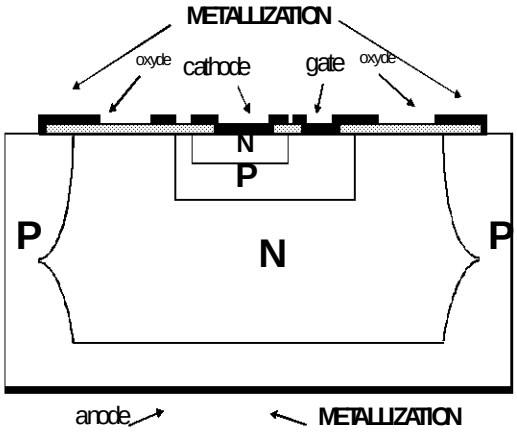
QA inspection is done through sampling for all batches :

SUBGROUP	SAMPLING LEVEL	AQL
VISUAL / MECHANICAL	II	0.40
ELECTRICAL AT 25°C	II	0.40

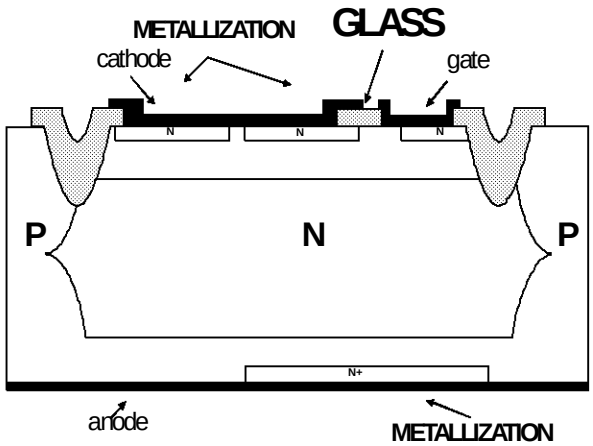
MESA TECHNOLOGY



PLANAR TECHNOLOGY

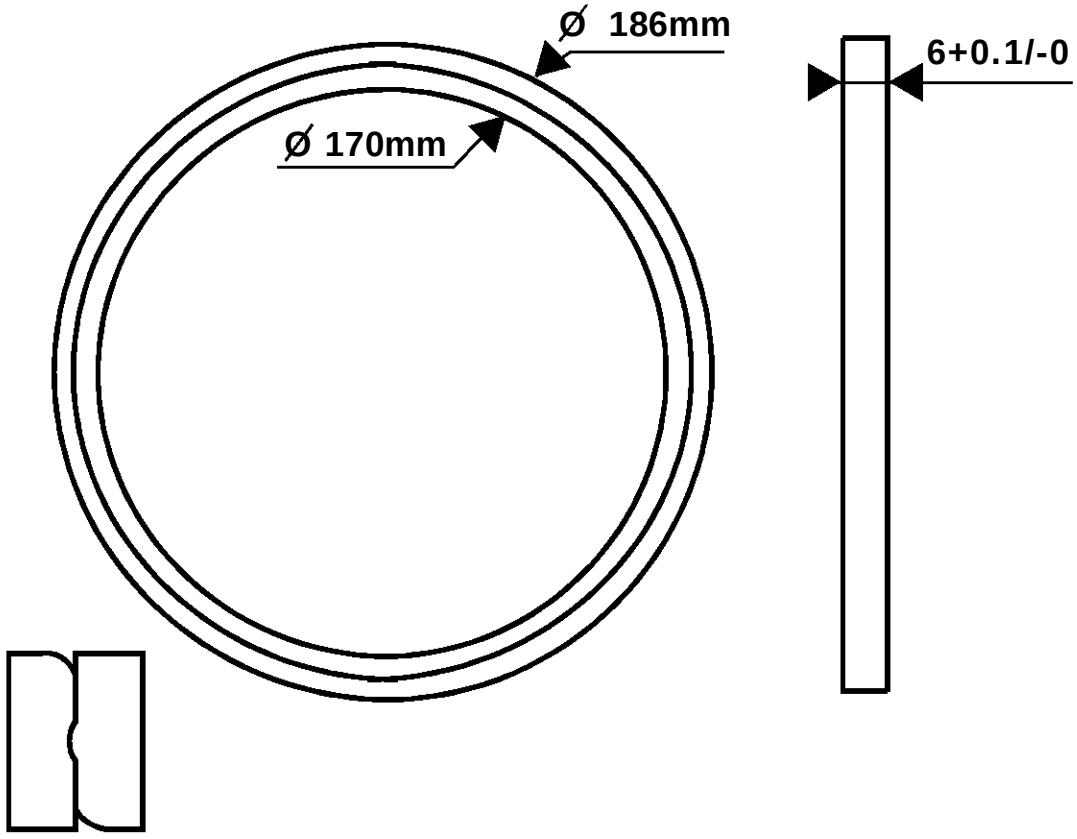


TOPGLASS TECHNOLOGY

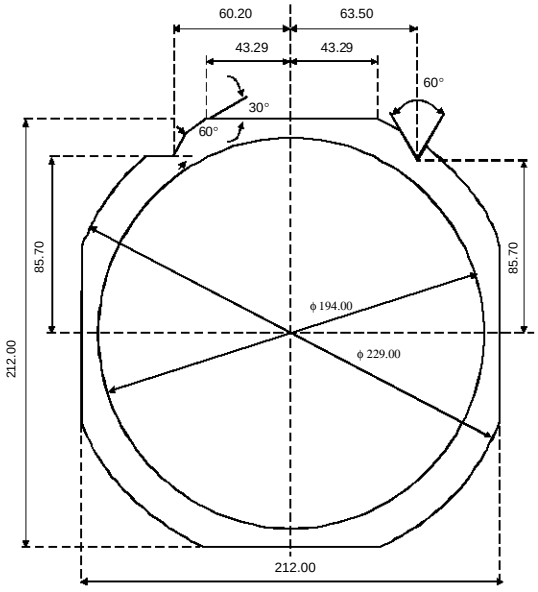


DRAWING

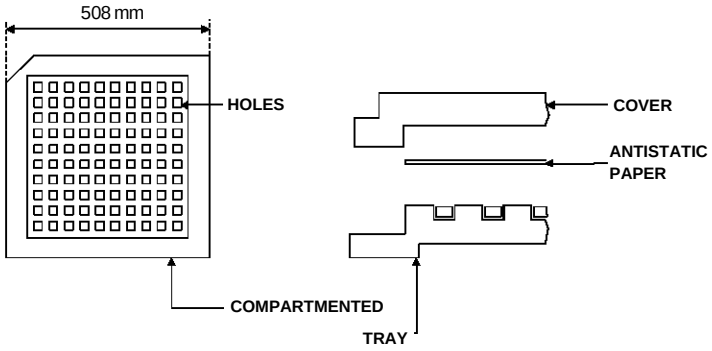
RING PAIR (AB code)



FRAME (F code) - Dimensions in milimeters



COMPARTMENT BOX (V, E code)



TRIACS

TECHNOLOGY : MESAGLASS

$I_{T(MS)}$ (A) \ $V_{DRM}=V_{RRM}$ (V)	200	400	600	800	1000
8	JCM-08 / JCMW08				
10	JCM-10 / JCMW10				
12	JCM-12 / JCMW12				
16	JCM-16 / JCMW16				
25	JCM-25	JCMW25			
40	JCM-40	JCMW40			
60	JCM-60	JCMW60			

TECHNOLOGY : TOPGLASS

$I_{T(RMS)}$ (A) \ $V_{DRM}=V_{RRM}$ (V)	200	400	600
4	JCT-04 / JCTW04		
8	JCTW08		
12	JCTW12		
16	JCTW16		
20	JCTW20		

NOTE : Leakage currents are specified at 50 lux max luminous intensity and at 60% hr max.
For types with V_{DRM} / V_{RRM} = 1000 V, I_{DRM} / I_{RRM} are specified on coated chips.

TECHNOLOGY : MESAGLASS

$I_{T(RMS)}$ (A) \ $V_{DRM}=V_{RRM}$ (V)	100	200	400	600	800	1000	1200
3	JTML 03						
4		JTM-04					
10		JTM-10					
16		JTM-16					
20		JTM-20					
30		JTM-30					
45		JTM-45					
70		JTM-70					

TECHNOLOGY : PLANAR / TOPGLASS

$I_{T(RMS)}$ (A) \ $V_{DRM}=V_{RRM}$ (V)	200	400	600
1	JTPL01		
2	JTTL02		
4	JTTL04		

NOTE : Leakage currents are specified at 50 lux max luminous intensity and at 60% hr max.
For types with V_{DRM} / V_{RRM} = 1000 V, I_{DRM} / I_{RRM} are specified on coated chips.

TRIACS FOUR QUADRANTS

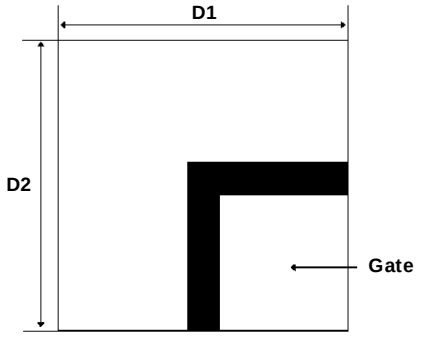
TYPES	V_{DRM} = V_{RRM} T_J = 125°C (V)	I_{TSM} max (1) T_P=10ms (A)	I_{GT} max (1) QI QII QIII QIV (mA)	V_{TM}@I_{TM} max (1) (V) (A)	dv/dt min at 0.67xV_{DRM} T_J=125°C (V/µs)	(di/dt)c typ T_j = 125°C (A/ms)	DICE Thick. µm	DICE Dim. (mm) D1xD2	DICE Metal.
$I_{T(RMS)}$: 8A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCM-08-020	200	80	50 50 50 100	1.8 11	100	4.5	200-600	3x3	2*-4-5 See § Metalli.
JCM-08-040	400								
JCM-08-060	600								
JCM-08-080	800								
$I_{T(RMS)}$: 10A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCM-10-020	200	100	50 50 50 100	1.7 14	100	5.5	200-600	3.3x3.3	2*-4-5 See § Metalli.
JCM-10-040	400								
JCM-10-060	600								
JCM-10-080	800								
$I_{T(RMS)}$: 12A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCM-12-020	200	120	50 50 50 100	1.7 17	100	6.5	200-600	3.5x3.5	2*-4-5 See § Metalli.
JCM-12-040	400								
JCM-12-060	600								
JCM-12-080	800								
$I_{T(RMS)}$: 16A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCM-16-020	200	160	50 50 50 100	1.8 22.5	200	8.5	200-600	4x4	2*-4-5 See § Metalli.
JCM-16-040	400								
JCM-16-060	600								
JCM-16-080	800								

(1) : T_J = 25°C

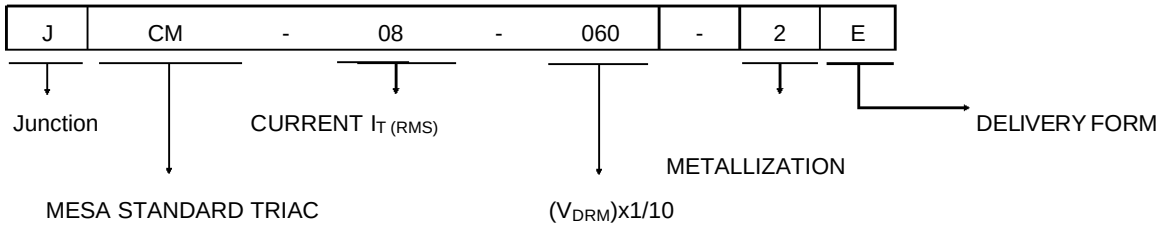
* = Prefered

TECHNOLOGY	MESA	
DELIVERY FORM	E	V
PACKAGING	X	X
Base Qty		
3 x 3	500 pcs	
3.3 x 3.3	500 pcs	
3.5 x 3.5	500 pcs	
4 x 4	320 pcs	

TOP VIEW



Example :



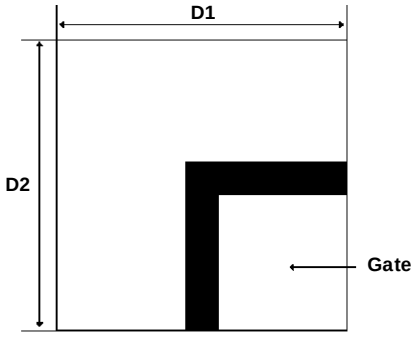
TYPES	V_{DRM} = V_{RRM} T_J = 125°C (V)	I_{TSM} max (1) T_P=10ms (A)	I_{GT} max (1) QI QII QIII QIV (mA)	$V_{TM}@I_{TM}$ max (1) (V) (A)	dv/dt min at 0.67xV_{DRM} T_J=125°C (V/µs)	(di/dt)c typ T_j = 125°C (A/ms)	DICE Thick. µm	DICE Dim. (mm) D1xD2	DICE Metal.
$I_{T(RMS)}$: 25A I_{DRM}/I_{RRM}=20 µA max T_J=25°C									
JCM-25-020 JCM-25-040 JCM-25-060 JCM-25-080	200 400 600 800	250	100 100 100 150	2 35	200	13.5	200-600	5.0x5.0	2*-4-5 See § Metal.
$I_{T(RMS)}$: 40A I_{DRM}/I_{RRM}=20 µA max T_J=25°C									
JCM-40-020 JCM-40-040 JCM-40-060 JCM-40-080	200 400 600 800	300	100 100 100 150	2 60	200	21.5	200-600	6.35x6.35	2*-4-5 See § Metal.
$I_{T(RMS)}$: 60A I_{DRM}/I_{RRM}=20 µA max T_J=25°C									
JCM-60-020 JCM-60-040 JCM-60-060 JCM-60-080	200 400 600 800	500	100 100 100 150	2 100	200	32	200-600	8.5x8.5	2-4-5* See § Metal.

(1) : T_J = 25°C

* = Prefered

TECHNOLOGY	MESA	
DELIVERY FORM	E	V
PACKAGING	X	X
Base Qty 5.0 x 5.0 6.35 x 6.35 8.5 x 8.5	245 pcs 180 pcs 80 pcs	

TOP VIEW



Example :

J	CM	-	25	-	060	-	2	E

Junction

MESA STANDARD TRIAC

CURRENT $I_{T\ (RMS)}$

(V_{DRM})x1/10

METALLIZATION

DELIVERY FORM

THREE QUADRANTS SNUBBERLESS TRIACS

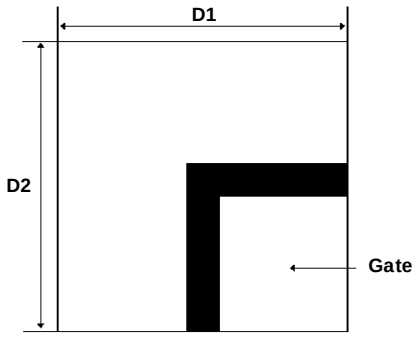
TYPES	V_{DRM} = V_{RRM} T_J = 125°C (V)	I_{TSM} max (1) T_P=10ms (A)	I_{GT} max (1) QI QII QIII (mA)	$V_{TM}@I_{TM}$ max (1) (V) (A)	dv/dt min at 0.67xV_{DRM} T_J=125°C (V/µs)	(di/dt)c typ T_j = 125°C (A/ms)	DICE Thick. µm	DICE Dim. (mm) D1xD2	DICE Metal.
$I_{T(RMS)}$: 8A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCMW08-020 JCMW08-040 JCMW08-060 JCMW08-060	200 400 600 800	80	50 50 50	1.8 11	500	7	200-600	3.0x3.0	2*-4-5 See § Metal.
$I_{T(RMS)}$: 10A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCMW10-020 JCMW10-040 JCMW10-060 JCMW10-060	200 400 600 800	100	50 50 50	1.75 14	500	9	200-600	3.3x3.3	2*-4-5 See § Metal.
$I_{T(RMS)}$: 12A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCMW12-020 JCMW12-040 JCMW12-060 JCMW12-060	200 400 600 800	120	100 100 100	1.8 17	500	12	200-600	3.5x3.5	2*-4-5 See § Metal.
$I_{T(RMS)}$: 16A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCMW16-020 JCMW16-040 JCMW16-060 JCMW16-060	200 400 600 800	160	100 100 100	1.7 22.5	500	14	200-600	4x4	2*-4-5 See § Metal.
$I_{T(RMS)}$: 25A I_{DRM}/I_{RRM}=20 µA max T_J=25°C									
JCMW25-020 JCMW25-040 JCMW25-060 JCMW25-060 JCMW25-100	200 400 600 800 1000	250	150 150 150	2 35	500	25	200-600	5.0x5.0	2*-4-5 See § Metal.
$I_{T(RMS)}$: 40A I_{DRM}/I_{RRM}=20 µA max T_J=25°C									
JCMW40-020 JCMW40-040 JCMW40-060 JCMW40-060 JCMW40-100	200 400 600 800 1000	300	150 150 150	2 60	500	40	200-600	6.35x6.35	2-4-5* See § Metal.
$I_{T(RMS)}$: 60A I_{DRM}/I_{RRM}=20 µA max T_J=25°C									
JCMW60-020 JCMW60-040 JCMW60-060 JCMW60-060 JCMW60-100	200 400 600 800 1000	500	200 200 200	2 100	500	60	200-600	8.5x8.5	2-4-5* See § Metal.

(1) : T_J = 25°C

* = Prefered

TECHNOLOGY	MESA	
DELIVERY FORM	E	V
PACKAGING	X	X
Base Qty		
3.0 x 3.0	500 pcs	
3.3 x 3.3	500 pcs	
3.5 x 3.5	500 pcs	
4.0 x 4.0	320 pcs	
5.0 x 5.0	245 pcs	
6.35 x 6.35	180 pcs	
8.5 x 8.5	80 pcs	
Base Qty	Multiple of min Qty and always ≥ 500 pcs	

TOP VIEW



Example :

J	CMW	08	-	060	-	2	E

Junction

MESA SNUBBERLESS TRIAC

CURRENT $I_{T\,(RMS)}$

(V_{DRM})x1/10

METALLIZATION

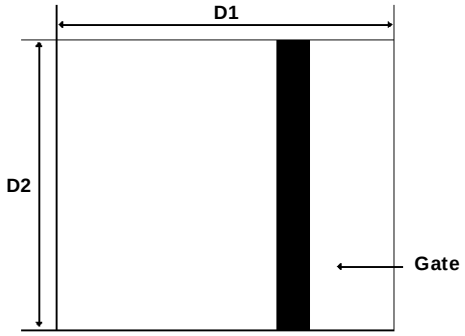
DELIVERY FORM

SENSITIVE TRIACS FOUR QUADRANTS

TYPES	V_{DRM} = V_{RRM} T_J = 125°C (V)	I_{TSM} max (1) T_P=10ms (A)	I_{GT} max (1) QI QII QIII QIV (mA)				V_{TM}@I_{TM} max (1) (V)	(A)	dv/dt Rgk = 1KΩ Typ at 0.67xV_{DRM} T_J =125°C (V/µs)	(di/dt)c typ T_j = 125°C (A/ms)	DICE Thick. µm typ.	Dim. (mm) D1xD2	Metal.
$I_{T(RMS)}$: 4A I_{DRM}/I_{RRM}=10 µA max R_{GK} = 1KΩ T_J = 25°C													
JCT-04-020 JCT-04-040 JCT-04-060	200 400 600	20	10	10	10	10	2	5.5	100	1.8	210	2x1.6	9

TECHNOLOGY	TOPGLASS		
DELIVERY FORM	A	AB	F
Max Qty per wafer ∅ 4"	2055		
Base unit of delivery	1 wafer		

TOP VIEW



Example :

J	CT	-	04	-	020	-	9	A

Junction

TOPGLASS SENSITIVE TRIAC

CURRENT $I_{T\ (RMS)}$

(V_{DRM})x1/10

METALLIZATION

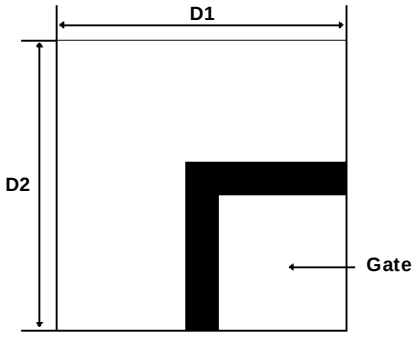
DELIVERY FORM

TYPES	V_{DRM} = V_{RRM} T_j = 125°C (V)	I_{TSM} max (1) T_P=10ms (A)	I_{GT} max (1) QI QII QIII (mA)	$V_{TM}@I_{TM}$ min (1) (2) (V) (A)	dv/dt min at 0.67xV_{DRM} T_j =125°C (V/µs)	(di/dt)c typ T_j = 125°C (A/ms	DICE Thick. µm typ.	DICE Dim. (mm) D1xD2	DICE Metal.
$I_{T(RMS)}$: 4A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCTW04-040 JCTW04-060	400 600	30	35 35 35	1.75 5.5	250	3.5	240	2.6x2.6	10
$I_{T(RMS)}$: 8A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCTW08-040 JCTW08-060	400 600	60	35 35 35	1.75 11	250	9	240	3.2x3.2	10
$I_{T(RMS)}$: 12A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCTW12-040 JCTW12-060	400 600	100	3.5 35 35	1.60 17	250	13	240	3.75x3.75	10
$I_{T(RMS)}$: 16A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCTW16-040 JCTW16-060	400 600	120	35 35 35	1.60 22.5	250	17	240	4.2x4.2	10
$I_{T(RMS)}$: 20A I_{DRM}/I_{RRM}=10 µA max T_J=25°C									
JCTW20-040 JCTW20-060	400 600	160	35 35 35	1.70 28	250	22	240	4.5x4.5	10

(1) : T_J = 25°C

TECHNOLOGY	TOPGLASS		
DELIVERY FORM	A	AB	F
Max. Qty per wafer ∅ 4”			
2.6x2.6	984		
3.2x3.2	648		
3.75x3.75	466		
4.2x4.2	363		
4.5x4.5	312		
Base unit of delivery	1 wafer		

TOP VIEW



Example :

J	CTW	12	-	040	-	10	A

Junction

CTW: TOPGLASS SNUBBERLESS TRIAC

12: CURRENT $I_{T(RMS)}$

040: (V_{DRM})x1/10

10: METALLIZATION

A: DELIVERY FORM

SENSITIVE SCR's

TYPES	V_{DRM} = V_{RRM} T_J= 110°C (V)	I_{TSM} max (1) T_P=10ms (A)	I_{GT} max (1) (mA)	V_{TM}@I_{TM} max (1) (V) (A)	dv/dt typ at 0.67xV_{DRM} T_J=110°C (V/µs)
JTML03-010	100	30	0.2	1.8 6	10
JTML03-020	200				
JTML03-040	400				
JTML03-060	600				

DICE		
Thick. µm	Dim. (mm) D1xD2	Metal.
200-600	2.54X1.8	4 See § Metal.

$I_{T(RMS)}$: 3A I_{DRM}/I_{RRM}=10 µA max R_{GK}= 1kΩ T_J=25°C

(1) : T_J = 25°C

TECHNOLOGY	MESA	
DELIVERY FORM	E	V
Base Qty 2.54 x 1.8	770 pcs	

Example :

J	TML	03	-	010	-	4	E

Junction

MESA SENSITIVE SCR's

CURRENT $I_{T\ (RMS)}$

(V_{DRM})x1/10

METALLIZATION

DELIVERY FORM

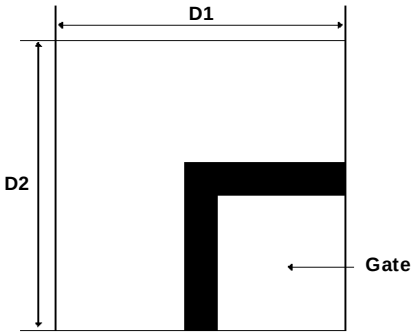
TYPES	V_{DRM} = V_{RRM} T_J= 125°C (V)	I_{TSM} max (1) T_P=10ms (A)	I_{GT} max (1) (mA)	V_{TM}@I_{TM} max (1) (V) (A)	dv/dt min at 0.67xV_{DRM} T_J=125°C (V/µs)	DICE Thick. µm	DICE Dim. (mm) D1xD2	DICE Metal.
$I_{T(RMS)}$: 4A I_{DRM}/I_{RRM}=10 µA max T_J=25°C								
JTM-04-020 JTM-04-040 JTM-04-060 JTM-04-080	200 400 600 800	40	25	1.8 8	100	200-600	2.6X2.6	2-4*-5 See § Metal.
$I_{T(RMS)}$: 10A I_{DRM}/I_{RRM}=10 µA max T_J=25°C								
JTM-10-020 JTM-10-040 JTM-10-060 JTM-10-080	200 400 600 800	100	25	1.8 20	100	200-600	2.8x2.8	2*-4-5 See § Metal.
$I_{T(RMS)}$: 16A I_{DRM}/I_{RRM}=10 µA max T_J=25°C								
JTM-16-020 JTM-16-040 JTM-16-060 JTM-16-080 JTM-16-100 JTM-16-120	200 400 600 800 1000 1200	160	25	1.8 32	100	200-600	3.5x3.5	2*-4-5 See § Metal.

(1) : T_J = 25°C

* = Prefered

TECHNOLOGY	MESA	
DELIVERY FORM	E	V
Base Qty 2.6 x 2.6 2.8 x 2.8 3.5 x 3.5	605 pcs 605 pcs 500 pcs	

TOP VIEW



Example :

J	TM	-	04	-	020	-	4	E

Junction

MESA SCR'S

CURRENT $I_{T\ (RMS)}$

(V_{DRM})x1/10

METALLIZATION

DELIVERY FORM

STANDARD SCR's

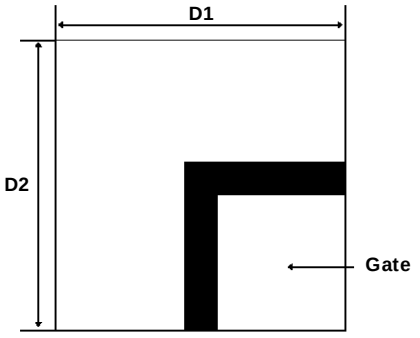
TYPES	V_{DRM} = V_{RRM} T_J= 125°C (V)	I_{TSM} max (1) T_P=10ms (A)	I_{GT} max (1) (mA)	V_{TM}@I_{TM} max (1) (V) (A)	dv/dt min at 0.67xV_{DRM} T_J=125°C (V/µs)	DICE Thick. µm	DICE Dim. (mm) D1xD2	DICE Metal.
$I_{T(RMS)}$: 20A I_{DRM}/I_{RRM}=10 µA max T_J=25°C								
JTM-20-020	200	200	40	1.8 40	100	200-600	4.42x4.42	2*-4-5 See § Metal.
JTM-20-040	400							
JTM-20-060	600							
JTM-20-080	800							
JTM-20-100	1000							
JTM-20-120	1200							
$I_{T(RMS)}$: 30A I_{DRM}/I_{RRM}=20 µA max T_J=25°C								
JTM-30-020	200	300	80	2 60	200	200-600	5.0x5.0	2*-4-5 See § Metal.
JTM-30-040	400							
JTM-30-060	600							
JTM-30-080	800							
JTM-30-100	1000							
JTM-30-120	1200							
$I_{T(RMS)}$: 45A I_{DRM}/I_{RRM}=20 µA max T_J=25°C								
JTM-45-020	200	400	80	2 90	200	200-600	6.35x6.35	2-4-5* See § Metal.
JTM-45-040	400							
JTM-45-060	600							
JTM-45-080	800							
JTM-45-100	1000							
JTM-45-120	1200							
$I_{T(RMS)}$: 70A I_{DRM}/I_{RRM}=20 µA max T_J=25°C								
JTM-70-020	200	600	150	2 140	200	200-600	8.5x8.5	2*-4-5 See § Metal.
JTM-70-040	400							
JTM-70-060	600							
JTM-70-080	800							
JTM-70-100	1000							
JTM-70-120	1200							

(1) : T_J = 25°C

* = Prefered

TECHNOLOGY	MESA	
DELIVERY FORM	E	V
Base Qty		
4.42 x 4.42	245 pcs	
5.0 x 5.0	245 pcs	
6.35 x 6.35	180 pcs	
8.5 x 8.8	80 pcs	

TOP VIEW



Example :

J	TM	-	30	-	020	-	2	E

Junction

MESA SCR'S

CURRENT $I_{T\ (RMS)}$

(V_{DRM})x1/10

METALLIZATION

DELIVERY FORM

TYPES	V_{DRM} = V_{RRM} R_{GK} = 1KΩ T_J= 125°C (V)	I_{TSM} max (1) T_P=10ms (A)	I_{GT} max (1) (mA)	V_{TM}@I_{TM} max (1) (V) (A)	dv/dt min at 0.67xV_{DRM} T_J=125°C (V/µs)	DICE Thick. µm typ	DICE Dim. (mm) D1xD2	DICE Metal.
$I_{T(RMS)}$: 0.8A I_{DRM}/I_{RRM}=10 µA max R_{GK} = 1KΩ T_J = 25°C								
JTPL01-020 JTPL01-030 JTPL01-040	200 300 400	7	0.2	2 1.6	25	150	0.76x0.76	6

(1) T_J=25°C

TECHNOLOGY	PLANAR		
DELIVERY FORM	A	AB	F
Max. Qty per wafer ∅ 3"	6370		
Base unit of delivery	1 wafer		

Example :

J	TPL	01	-	040	-	6	A

Junction — PLANAR SENSITIVE SCR's

CURRENT $I_{T\ (RMS)}$

(V_{DRM})x1/10

METALLIZATION

DELIVERY FORM

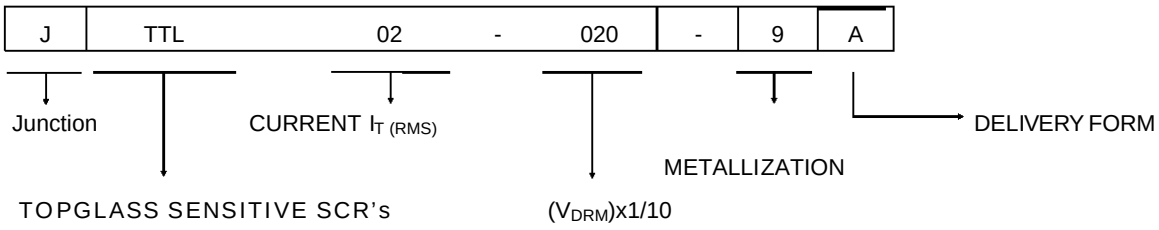
SENSITIVE SCR's

TYPES	V_{DRM} = V_{RRM} T_J= 125°C (V)	I_{TSM} max (1) T_P=10ms (A)	I_{GT} max (1) (mA)	V_{TM}@I_{TM} max (1) (V) (A)	dv/dt R_{GK} = 1KΩ Typ at 0.67xV_{DRM} T_J=125°C (V/µs)	DICE Thick. µm typ.	DICE Dim. (mm) D1xD2	DICE Metal.
$I_{T(RMS)}$: 2A I_{DRM}/I_{RRM}=10 µA max R_{GK} = 1KΩ T_J = 25°C								
JTTL02-020 JTTL02-040 JTTL02-060	200 400 600	20	0.2	1.45 2.5	15	210	1.48x1.33	9
$I_{T(RMS)}$: 4A I_{DRM}/I_{RRM}=20 µA max R_{GK} = 1KΩ T_J = 25°C								
JTTL04-020 JTTL04-040 JTTL04-060	200 400 600	30	0.2	1.8 8	15	210	2x1.6	9

(1) T_J=25°C

TECHNOLOGY	TOPGLASS		
DELIVERY FORM	A	AB	F
Max. Qty per wafer ∅ 4" 1.48x1.33 2x1.6	 3400 2055		
Base unit of delivery	1 wafer		

Example :



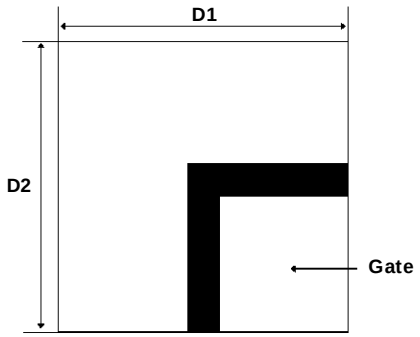
TYPES	V_{DRM} = V_{RRM} T_J= 125°C (V)	I_{TSM} max (1) T_P=10ms (A)	H_{ET} * max G_AA_S source at λ = 945 nm ($mw/cm^{2)}$	V_{TM}@I_{TM} typ (1) (V) (A)	dv/dt R_{GK} = 1KΩ min at 0.67xV_{DRM} T_J=125°C (V/µs)	DICE Thick. µm typ.	DICE Dim. (mm) D1xD2	DICE Metal.
$I_{T(RMS)}$: 3A I_{DRM}/I_{RRM}=10 µA max R_{GK} = 1KΩ T_J = 25°C								
JLO-03-020	200	30	70	1.4 3	20	170	1.3x1.3	6
JLO-03-040	400							

(1) T_J=25°C

TECHNOLOGY	PLANAR	
DELIVERY FORM	A	AB
Max. Qty per wafer ∅ 3" 1.3x1.3	2500	
Base unit of delivery	1 wafer	

* Effective trigger irradiance

TOP VIEW



Example :

J	LO	-	03	-	020	-	6	A

Junction — PLANAR OPTO SCR'S

CURRENT $I_{T\ (RMS)}$

(V_{DRM})x1/10

METALLIZATION

DELIVERY FORM

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