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Thyristors

Ordering Information

All products listed must be ordered in standard packing increments.

Product Name	Package	Standard Packing Quantities (Bulk)
SLA0201	SLA12Pin	1080(Stick)
STA203A	STA8	1000(Box)/4050(Stick)
TF321M-A	TO220	1000(Box)/1440(Stick)
TF321S	TO220F	1000(Box)/3750(Stick)
TF341M	TO220	1000(Box)/1440(Stick)
TF341M-A	TO220	1000(Box)/1440(Stick)
TF361M	TO220	1000(Box)/1440(Stick)
TF361M-A	TO220	1000(Box)/1440(Stick)
TF361S	TO220F	1000(Box)/3750(Stick)
TF541M	TO220	1000(Box)/1440(Stick)
TF541S	TO220F	1000(Box)/3750(Stick)
TF541S-A	TO220F	1000(Box)/3750(Stick)
TF561M	TO220	1000(Box)/1440(Stick)
TF561S	TO220F	1000(Box)/3750(Stick)
TF561S-A	TO220F	1000(Box)/3750(Stick)
TF821M	TO220	1000(Box)/1440(Stick)
TF821S	TO220F	1000(Box)/3750(Stick)
TF841M	TO220	1000(Box)/1440(Stick)
TF841S	TO220F	1000(Box)/3750(Stick)
TF861M	TO220	1000(Box)/1440(Stick)
TF861S	TO220F	1000(Box)/3750(Stick)
TFC561D	TO220S(Straight)	600(Stick)
TM1041S-R	TO220F	1000(Box)/3750(Stick)
TM1061S-R	TO220F	1000(Box)/3750(Stick)
TM1241S-R	TO220F	1000(Box)/3750(Stick)
TM1261S-R	TO220F	1000(Box)/3750(Stick)
TM2541B-L	TO3PF	500(Box)/1080(Stick)
TM2561B-L	TO3PF	500(Box)/1080(Stick)
TM341S-R	TO220F	1000(Box)/3750(Stick)
TM361S-R	TO220F	1000(Box)/3750(Stick)
TM541S-R	TO220F	1000(Box)/3750(Stick)
TM561S-R	TO220F	1000(Box)/3750(Stick)
TM583S-L	TO220F	1000(Box)/3750(Stick)
TM883S-L	TO220F	1000(Box)/3750(Stick)
TMA104S-L	TO220F	1000(Box)/3750(Stick)
TMA106S-L	TO220F	1000(Box)/3750(Stick)
TMA124S-L	TO220F	1000(Box)/3750(Stick)
TMA126S-L	TO220F	1000(Box)/3750(Stick)
TMA164B-L	TO3PF	500(Box)/1080(Stick)
TMA164P-L	TO3P	500(Box)/1080(Stick)
TMA164S-L	TO220F	1000(Box)/3750(Stick)
TMA166B-L	TO3PF	500(Box)/1080(Stick)
TMA166P-L	TO3P	500(Box)/1080(Stick)
TMA166S-L	TO220F	1000(Box)/3750(Stick)
TMA204S-L	TO220F	1000(Box)/3750(Stick)
TMA206S-L	TO220F	1000(Box)/3750(Stick)
TMA34M-L	TO220	1000(Box)/1440(Stick)
TMA34S-L	TO220F	1000(Box)/3750(Stick)
TMA36M-L	TO220	1000(Box)/1440(Stick)
TMA36S-L	TO220F	1000(Box)/3750(Stick)
TMA54M-L	TO220	1000(Box)/1440(Stick)
TMA54S-L	TO220F	1000(Box)/3750(Stick)
TMA56M-L	TO220	1000(Box)/1440(Stick)
TMA56S-L	TO220F	1000(Box)/3750(Stick)
TMA84M-L	TO220	1000(Box)/1440(Stick)
TMA84S-L	TO220F	1000(Box)/3750(Stick)
TMA86M-L	TO220	1000(Box)/1440(Stick)
TMA86S-L	TO220F	1000(Box)/3750(Stick)
TMB166S-L	TO220F	1000(Box)/3750(Stick)
TMB206S-L	TO220F	1000(Box)/3750(Stick)

Application Note

Since reliability can be affected adversely by improper storage environment or handling methods during Characteristic tests, please observe the following cautions.

■ Cautions for Storage

- ●Ensure that storage conditions comply with the normal temperature (5 to 35°C) and the normal relative humidity (around 40 to 75%), and avoid storage locations that experience high temperature and humidity, or extreme changes in temperature or humidity.
- ●Avoid locations where dust or harmful gases are present, and avoid direct sunlight.
- ●Reinspect the devices for rust in leads and solderability after stored for a long time.

■ Cautions for Characteristic Tests and Handling

On characteristics test at incoming inspection, etc, take good care to avoid the surge voltages from the test equipment, the short circuit at terminals, or the wrong connection.

■ Silicone Grease

When using a heatsink, please coat thinly and evenly the back surface of the device and both surfaces of the insulating plate with silicone grease to lower the thermal resistance between the device and the heatsink.
Please select proper silicone grease carefully since the oil in some grease products may penetrate the device and result in an extremely short device life.
Recommended Silicone Grease
- G-746 (Shin-Etsu Chemical)
- YG6260 (Momentive Performance Materials Inc.)
- SC102 (Dow Corning Toray Silicone)

■ Mounting Torque

When mounting torque is insufficient, thermal resistance increases, and so heat radiation effect is decreased. When the torque is excessive, the screw may be broken, the heatsink may be deformed, and the device frame may be distorted, resulting in the device damage. Recommended mounting torque per package is as follows:

● Mounting Torque Table

Package	Screw Torque
TO-220 (MT-25)	0.490 to 0.686 N•m (5 to 7kgf•cm)
TO-220F (FM20)	
TO-3P (MT-100)	0.686 to 0.882 N•m (7 to 9kgf•cm)
TO-3PF (FM100)	
SIP with Fin (SLA)	0.588 to 0.784 N•m (6 to 8kgf•cm)

* When the surface of a heatsink where Full Mold package is to be mounted is not flat due to the burred metal bracket for screwing around the mounting hole of the heatsink, the resin of the package might be cracked even if the torque is lower than the recommended value.
* When a screw is fastened with an air driver for the Full Mold package, a large impact is generated at the time of stop, and the resin may crack even if the torque is lower than the recommended value. An electric driver, therefore, should be used instead of an air driver.

■ Heatsink

A larger contact area between the device and the heatsink is required for more effective heat radiation. To ensure a larger contact area, minimize mounting holes. And select a heatsink with a surface smooth enough and free from burrs and slivers.

■ Soldering Temperature

In general, the device mounted on a printed circuit board is subjected to high temperatures from flow solder in a solder bath, or, from a soldering iron at hand soldering.
The testing method and test conditions (JIS-C-7021 standards) for a device's heat resistance to soldering are:
At a distance of 1.5mm from the device's main body, apply 260°C for 10 seconds, and 350°C for 3 seconds.
Please observe these limits and finish soldering in as short a time as possible.
Since reliability can be affected adversely by improper storage environment or handling methods during Characteristic tests, please observe the following cautions.

3-1 Thyristors

Thyristors

Part Number	Absolute Maximum Ratings													
	V_{RSM} V_{DSM} (V)	V_{RRM} V_{DRM} (V)	$I_{T(AV)}$ (A)	Conditions Tc (°C)	$I_{T(RMS)}$ (50Hz) (A)	I_{TSM} 50Hz Single Half Sine Wave, Default T_j=125°C (A)	P_{GM} (W)	$P_{G(AV)}$ (W)	V_{RGM} (V)	I_{FGM} (A)	T_j (°C)	T_{stg} (°C)	I_{RRM} I_{DRM} (mA) max	Conditions T_j (°C)
TF321M-A	300	200	3.0	87	4.7	60	5.0	0.5	5.0	2.0	−40 to +110	−40 to +125	1.0	110
TF321S	300	200	3.0	93	4.7	60	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF821M	300	200	8.0	83	12.6	120	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF821S	300	200	8.0	74	12.6	120	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF341M	500	400	3.0	102	4.7	60	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF341M-A	500	400	3.0	87	4.7	60	5.0	0.5	5.0	2.0	−40 to +110	−40 to +125	1.0	110
TF541M	500	400	5.0	96	7.8	80	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF541S	500	400	5.0	87	7.8	80	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF541S-A	500	400	5.0	88	7.8	80	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF841M	500	400	8.0	83	12.6	120	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF841S	500	400	8.0	74	12.6	120	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
SLA0201	650	600	5 × 4		7.8	80	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF361M	700	600	3.0	102	4.7	60	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF361M-A	700	600	3.0	87	4.7	60	5.0	0.5	5.0	2.0	−40 to +110	−40 to +125	1.0	110
TF361S	700	600	3.0	93	4.7	60	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF561M	700	600	5.0	96	7.8	80	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF561S	700	600	5.0	87	7.8	80	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF561S-A	700	600	5.0	88	7.8	80	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF861M	700	600	8.0	83	12.6	120	5.0	0.5	5.0	2.0	−40 to +125		2.0	125
TF861S	700	600	8.0	74	12.6	120	5.0	0.5	5.0	2.0	−40 to +125		2.0	125

3-Pin Reverse Conducting Thyristors for HID Lamp Ignition

Part Number	Absolute Maximum Ratings										I_{DRM}		V_{TM}		
	V_{DRM} (V)	I_{TRM} (50Hz) (A)	di/dt (A/μs)	P_{GM} (W)	$P_{G(AV)}$ (W)	V_{RGM} (V)	I_{FGM} (A)	I_{FRM}* (A)	T_j (°C)	T_{stg} (°C)	(mA) max	Conditions T_j (°C)	(V) max	Conditions T_c (°C)	Conditions I_{TM} (A)
TFC561D	600	430	1200	5.0	0.5	5.0	2.0	240	−40 to +125		1.0	125	1.4		10

*: V_D≤430V, 100kcycle, W_p=1.3*m*s, T_a=125°C

Electrical Characteristics																		Package	Mass
	V_{TM}	Conditions		V_{GT}		I_{GT}		Conditions	V_{GD}			dv/dt	Conditions		I_H	R_{th}		
	(V)	T_c (°C)	I_{TM} (A)	(V)		(mA)		Tc (°C)	(V)	T_j (°C)	Conditions V_D (V)	(V/μs)	T_j (°C)	V_D (V)	(mA)	(°C/W)		g
	max			typ	max	typ	max		min			typ			typ	max		
	1.4	25	5		1.0		0.1	25	0.1	110	1/2V_{DRM}	20	110	1/2V_{DRM}	1.0	3.0	TO-220	2.6
	1.4	25	5	0.7	1.5	3.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	5.0	5.0	TO-220F	2.1
	1.4	25	15		1.5	5.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	2.7	TO-220	2.6
	1.4	25	15		1.5	5.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	3.6	TO-220F	2.1
	1.4	25	5		1.5	2.0	10	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	3.0	TO-220	2.6
	1.4	25	5		1.0		0.1	25	0.1	110	1/2V_{DRM}	20	110	1/2V_{DRM}	1.0	3.0	TO-220	2.6
	1.4	25	10		1.5	3.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	3.0	TO-220	2.6
	1.4	25	10		1.5	3.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	4.0	TO-220F	2.1
	1.4	25	10		1.5	0.03	0.2	25	0.1	125	1/2V_{DRM}	20	125	1/2V_{DRM}	4.0	4.0	TO-220F	2.1
	1.4	25	15		1.5	5.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	2.7	TO-220	2.6
	1.4	25	15		1.5	5.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	3.6	TO-220F	2.1
	1.4	25	10	0.7	1.5	5.0	10	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0		SIP12 with Fin (SLA12Pin)	6.1
	1.4	25	5		1.5	2.0	10	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	3.0	TO-220	2.6
	1.4	25	5		1.0		0.1	25	0.1	110	1/2V_{DRM}	20	110	1/2V_{DRM}	1.0	3.0	TO-220	2.6
	1.4	25	5	0.7	1.5	3.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	5.0	5.0	TO-220F	2.1
	1.4	25	10		1.5	3.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	3.0	TO-220	2.6
	1.4	25	10		1.5	3.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	4.0	TO-220F	2.1
	1.4	25	10		1.5	0.03	0.2	25	0.1	125	1/2V_{DRM}	20	125	1/2V_{DRM}	4.0	4.0	TO-220F	2.1
	1.4	25	15		1.5	5.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	2.7	TO-220	2.6
	1.4	25	15		1.5	5.0	15	25	0.1	125	1/2V_{DRM}	50	125	1/2V_{DRM}	4.0	3.6	TO-220F	2.1

Electrical Characteristics																Package	Mass
	V_{GT}		I_{GT}		Conditions	V_{GD}				I_H	Rth	V_F					
	(V)		(mA)		Tc (°C)	(V)	Conditions Tj (°C)	Conditions V_D (V)		(mA)	(°C/W)	(V)	Conditions IF (A)				(g)
	typ	max	typ	max		min				typ	max	max					
		1.5		20		0.1	125	480		10	4.0	1.4	10.0			TO-220S (Straight)	1.5

Triacs

Part Number	Absolute Maximum Ratings																
	V_{DRM} (V)	$I_{T\ (RMS)}$ (A)	Conditions T_c (°C)	I_{TSM} (A)	Conditions	P_{GM} (W)	$P_{G\ (AV)}$ (W)	I_{GM} (A)	T_j (°C)	T_{stg} (°C)	I_{DRM1} (mA) max	Conditions	I_{DRM2} (mA) max	Conditions	V_{TM} (V) max	Conditions I_{TM} (A)	
TMA34M-L*1	400	3		30		3	0.3	0.5	–40 to +125		0.1		2		1.5	4.5	
TMA34S-L	400	3	109	30		3	0.3	0.5	–40 to +125		0.1		2		1.5	4.5	
TM341S-R	400	3	109	30		3	0.3	0.5	–40 to +125		0.1		2		1.6	5	
TMA54M-L*1	400	5		50		5	0.5	2	–40 to +125		0.1		2		1.5	7	
TMA54S-L	400	5	102	50		5	0.5	2	–40 to +125		0.1		2		1.5	7	
TM541S-R	400	5	104	50		5	0.5	2	–40 to +125		0.1		2		1.6	7	
TMA84M-L*1	400	8		80		5	0.5	2	–40 to +125		0.1		2		1.5	12	
TMA84S-L	400	8	92	80		5	0.5	2	–40 to +125		0.1		2		1.5	12	
TMA104S-L	400	10	85	100		5	0.5	2	–40 to +125		0.1		2		1.5	14	
TM1041S-R	400	10	90	80		5	0.5	2	–40 to +125		0.1		2		1.6	14	
TMA124S-L	400	12	77	120		5	0.5	2	–40 to +125		0.1		2		1.5	17	
TM1241S-R	400	12	84	110		5	0.5	2	–40 to +125		0.1		2		1.6	16	
TMA164S-L	400	16	66	160		5	0.5	2	–40 to +125		0.1		2		1.45	20	
TMA164P-L	400	16	108	160		5	0.5	2	–40 to +125		0.1		2		1.4	20	
TMA164B-L	400	16	98	160		5	0.5	2	–40 to +125		0.1		2		1.4	20	
TMA204S-L	400	20	53	190		5	0.5	2	–40 to +125		0.1		2		1.4	20	
TMA254B-L*1	400	25		250		5	0.5	2	–40 to +125		0.1		2		1.3	20	
TM2541B-L	400	25	84	240	125°C	5	0.5	2	–40 to +125		0.1		2		1.3	20	
STA203A	400	1.2 · 3	97	10	50Hz	1.2	0.1	0.5	–40 to +125		0.1	25°C	1	125°C	1.6	1.6	
TMA36M-L*1	600	3		30	1shot	3	0.3	0.5	–40 to +125		0.1	$V_D=V_{DRM}$	2	$V_D=V_{DRM}$	1.5	4.5	
TMA36S-L	600	3	109	30		3	0.3	0.5	–40 to +125		0.1		2		1.5	4.5	
TM361S-R	600	3	109	30		3	0.3	0.5	–40 to +125		0.1		2		1.6	5	
TMA56M-L*1	600	5		50		5	0.5	2	–40 to +125		0.1		2		1.5	7	
TMA56S-L	600	5	102	50		5	0.5	2	–40 to +125		0.1		2		1.5	7	
TM561S-R	600	5	104	50		5	0.5	2	–40 to +125		0.1		2		1.6	7	
TMA86M-L*1	600	8		80		5	0.5	2	–40 to +125		0.1		2		1.5	12	
TMA86S-L	600	8	92	80		5	0.5	2	–40 to +125		0.1		2		1.5	12	
TMA106S-L	600	10	85	100		5	0.5	2	–40 to +125		0.1		2		1.5	14	
TM1061S-R	600	10	90	90		5	0.5	2	–40 to +125		0.1		2		1.6	14	
TMA126S-L	600	12	77	120		5	0.5	2	–40 to +125		0.1		2		1.5	17	
TM1261S-R	600	12	84	110		5	0.5	2	–40 to +125		0.1		2		1.6	16	
TMA166S-L	600	16	66	160		5	0.5	2	–40 to +125		0.1		2		1.45	20	
TMA166P-L	600	16	108	160		5	0.5	2	–40 to +125		0.1		2		1.4	20	
TMA166B-L	600	16	98	160		5	0.5	2	–40 to +125		0.1		2		1.4	20	
TMB166S-L	600	16	94	160		5	0.5	2	–40 to +150		0.2		2		1.45	20	
TMA206S-L	600	20	53	190		5	0.5	2	–40 to +125		0.1		2		1.4	20	
TMB206S-L	600	20	85	200		5	0.5	2	–40 to +150		0.1		2		1.4	20	
TMA256B-L*1	600	25		250		5	0.5	2	–40 to +125		0.1		2		1.3	20	
TM2561B-L	600	25	84	240		5	0.5	2	–40 to +125		0.1		2		1.3	20	
TM583S-L	800	5	101	45		5	0.5	2	–40 to +125		0.1		2		1.6	7	
TM883S-L	800	8	91	80		5	0.5	2	–40 to +125		0.1		2		1.6	10	

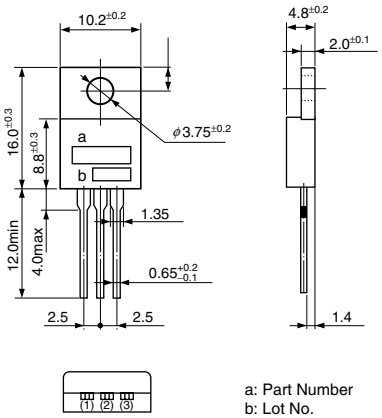
*1: Under development

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

V_{GT}					I_{GT}					V_{GD}			(dv/dt) c			$R_{th\ (j\text{-}c)}$	Package	Mass
Mode I (T2+, G+) (V) max	Mode II (T2+, G–) (V) max	Mode III (T2–, G–) (V) max	Conditions V_D (V)	Conditions R_L (Ω)	Mode I (T2+, G+) (mA) max	Mode II (T2+, G–) (mA) max	Mode III (T2–, G–) (mA) max	Conditions V_D (V)	Conditions R_L (Ω)		Conditions T_j (°C)	Conditions V_O (V)	(V/us) min	Conditions (dv/dt) c (–A/ms)	Conditions T_j (°C)	(°C/W) max		(g)
1.5	1.5	1.5	12	20	15/20	15/20	15/20	12	20	0.2	125	1/2V_{DRM}	5	1.5	125	-	TO-220	2.6
1.5	1.5	1.5	12	20	15/20	15/20	15/20	12	20	0.2	125	1/2V_{DRM}	5	1.5	125	4.5	TO-220F	2.1
1.8	1.2	1.2	20	40	12	12	12	20	40	0.1	125	1/2V_{DRM}	-			5	TO-220F	2.1
1.5	1.5	1.5	12	20	15/20	15/20	15/20	12	20	0.2	125	1/2V_{DRM}	5	2.5	125	-	TO-220	2.6
1.5	1.5	1.5	12	20	15/20	15/20	15/20	12	20	0.2	125	1/2V_{DRM}	5	2.5	125	4	TO-220F	2.1
1.8	1.2	1.2	20	40	12	12	12	20	40	0.1	125	1/2V_{DRM}	-			4	TO-220F	2.1
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	4	125	-	TO-220	2.6
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	4	125	3.7	TO-220F	2.1
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	5	125	3.6	TO-220F	2.1
2	1.2	1.2	20	40	7	7	7	20	40	0.1	125	1/2V_{DRM}	-			3.3	TO-220F	2.1
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	6	125	3.5	TO-220F	2.1
1.8	1.2	1.2	20	40	8	8	8	20	40	0.1	125	1/2V_{DRM}	-			3	TO-220F	2.1
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	8	125	3.3	TO-220F	2.1
1.5	1.5	1.5	12	20	30	30	30	12	20	0.2	125	1/2V_{DRM}	10	8	125	1.2	TO-3P	6.0
1.5	1.5	1.5	12	20	30	30	30	12	20	0.2	125	1/2V_{DRM}	10	8	125	1.8	TO-3PF	6.5
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	10	125	3.2	TO-220F	2.1
1.5	1.5	1.5	12	30	30	30	30	12	20	0.2	125	1/2V_{DRM}	10	12	125	1.6	TO-3PF	6.5
2	2	2	6	10	30	30	30	6	10	0.2	125	1/2V_{DRM}	10	4	125	1.5	TO-3PF	6.5
3.5	1.2	1.2	6	10	3	3	3	6	10	0.2	125	1/2V_{DRM}	1		125	20	SIP8(STA8Pin)	2.1
1.5	1.5	1.5	12	20	15/20	15/20	15/20	12	20	0.2	125	1/2V_{DRM}	5	1.5	125	-	TO-220	2.6
1.5	1.5	1.5	12	20	15/20	15/20	15/20	12	20	0.2	125	1/2V_{DRM}	5	1.5	125	4.5	TO-220F	2.1
1.8	1.2	1.2	20	40	12	12	12	20	40	0.1	125	1/2V_{DRM}	-			5	TO-220F	2.1
1.5	1.5	1.5	12	20	15/20	15/20	15/20	12	20	0.2	125	1/2V_{DRM}	5	2.5	125	-	TO-220	2.6
1.5	1.5	1.5	12	20	15/20	15/20	15/20	12	20	0.2	125	1/2V_{DRM}	5	2.5	125	4	TO-220F	2.1
1.8	1.2	1.2	20	40	12	12	12	20	40	0.1	125	1/2V_{DRM}	-			4	TO-220F	2.1
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	4	125	-	TO-220	2.6
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	4	125	3.7	TO-220F	2.1
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	5	125	3.6	TO-220F	2.1
2	1.2	1.2	20	40	7	7	7	20	40	0.1	125	1/2V_{DRM}	-			3.3	TO-220F	2.1
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	6	125	3.5	TO-220F	2.1
1.8	1.2	1.2	20	40	8	8	8	20	40	0.1	125	1/2V_{DRM}	-			3	TO-220F	2.1
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	8	125	3.3	TO-220F	2.1
1.5	1.5	1.5	12	20	30	30	30	12	20	0.2	125	1/2V_{DRM}	10	8	125	1.2	TO-3P	6.0
1.5	1.5	1.5	12	20	30	30	30	12	20	0.2	125	1/2V_{DRM}	10	8	125	1.8	TO-3PF	6.5
1.5	1.5	1.5	12	20	30	30	30	12	20	0.2	125	1/2V_{DRM}	10	10	125	3.0	TO-220F	2.1
1.5	1.5	1.5	12	20	20/30	20/30	20/30	12	20	0.2	125	1/2V_{DRM}	10	10	125	3.2	TO-220F	2.1
1.5	1.5	1.5	12	20	30	30	30	12	20	0.2	125	1/2V_{DRM}	10	10	125	2.7	TO-220F	2.1
1.5	1.5	1.5	12	20	30	30	30	12	20	0.2	125	1/2V_{DRM}	10	12	125	1.6	TO-3PF	6.5
2	2	2	6	10	30	30	30	6	10	0.2	125	1/2V_{DRM}	10	4	125	1.5	TO-3PF	6.5
2	2	2	6	10	20	20	20	6	10	0.2	125	1/2V_{DRM}	5	2	125	4	TO-220F	2.1
2	2	2	6	10	30	30	30	6	10	0.2	125	1/2V_{DRM}	10	4	125	3.6	TO-220F	2.1

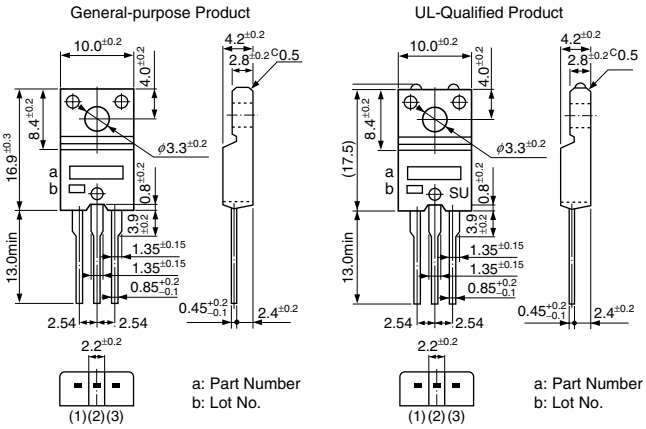
Package Type (Dimensions)

• TO-220



a: Part Number
b: Lot No.

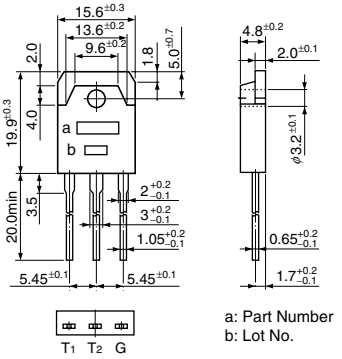
• TO-220F



a: Part Number
b: Lot No.

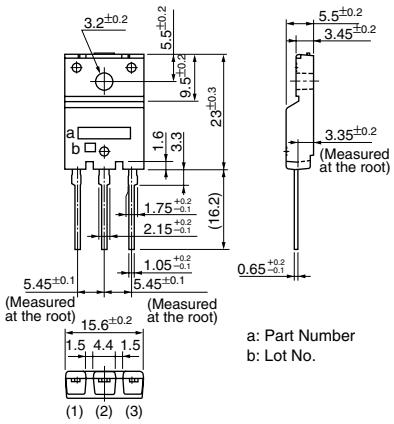
Pin No.	
(1)	Cathode (K)
(2)	Anode (A)
(3)	Gate (G)

• TO-3P



a: Part Number
b: Lot No.

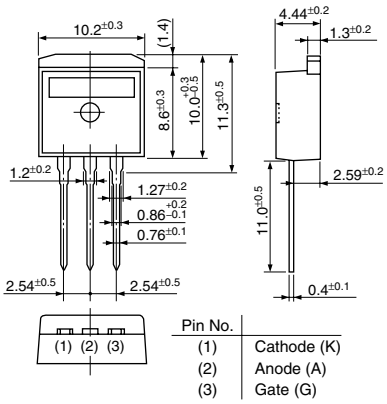
• TO-3PF



a: Part Number
b: Lot No.

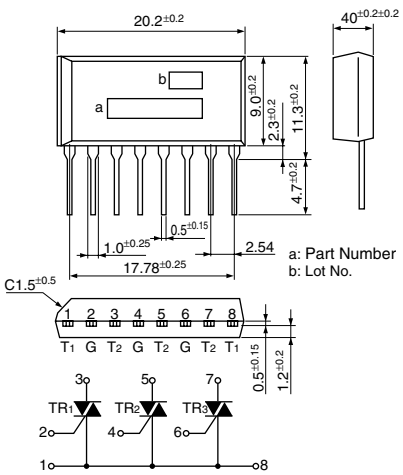
(1) Terminal 1 (T_1)
(2) Terminal 2 (T_2)
(3) Gate (G)

• TO-220S Straight



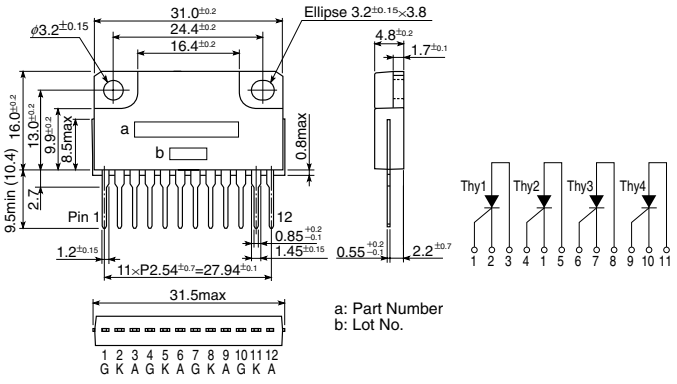
Pin No.	
(1)	Cathode (K)
(2)	Anode (A)
(3)	Gate (G)

• STA8Pin



a: Part Number
b: Lot No.

• SLA12Pin



a: Part Number
b: Lot No.

(Unit: mm)