

KEC

**Power Transistor  
(MJE Series Device)**

## Power Transistor (MJE Series)

### ■ Application

- High Voltage Switch Mode

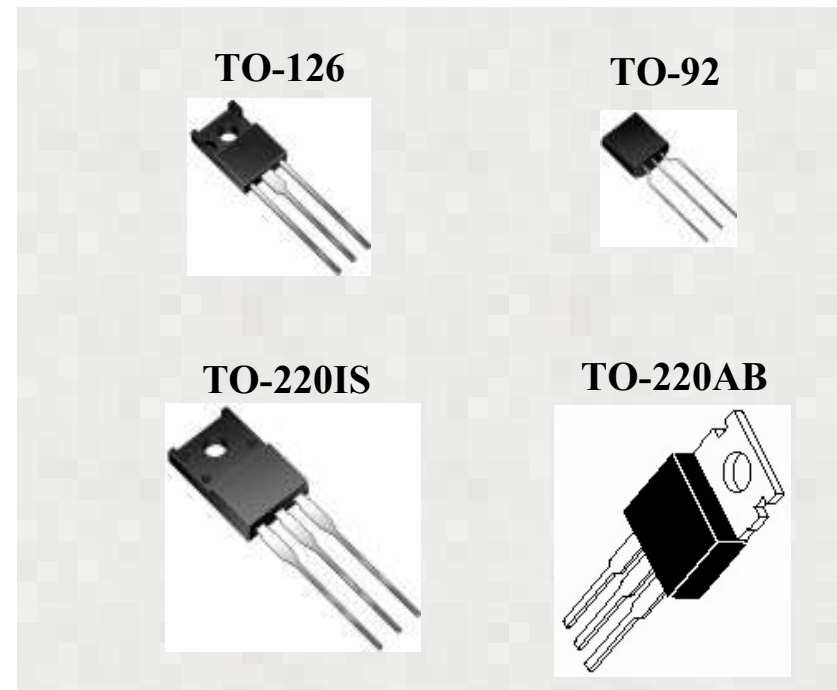
### ■ Feature

- High Speed Switching
- High Voltage Capability
- Suitable for Electronic Ballast
- Suitable for Switching Regulator and Motor Control

### ■ PKG Line-up

- TO-92 PKG & TO-126 PKG
  - ☞ Suitable for Compact Set Size (Ballast)
- TO-220IS PKG & TO-220AB PKG
  - ☞ High Power Dissipation Application (With Heat-Sink)

#### << MJE Series Device PKG Line-up >>



**Target Applications**

**Compact ballast**



**Adaptor**



**ballast**

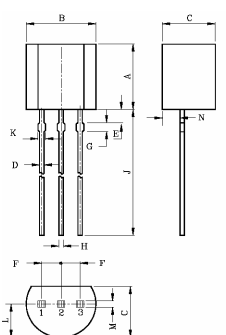
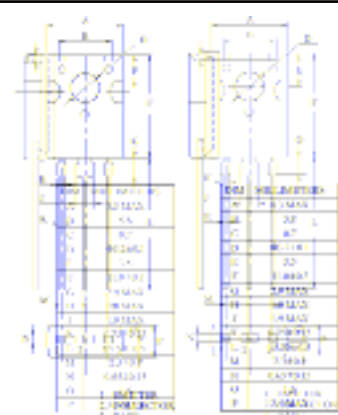
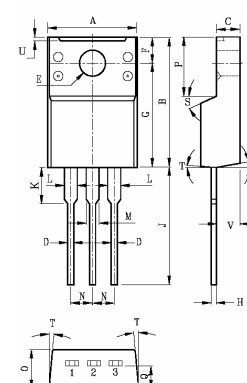
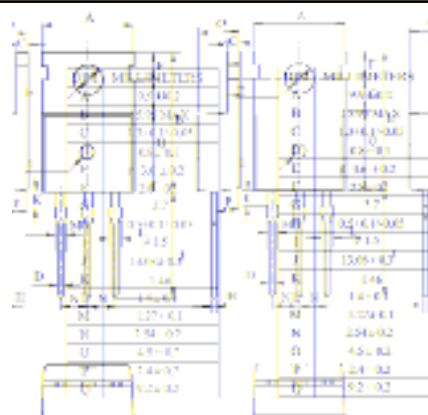


**SMPS & DC-DC Converter**



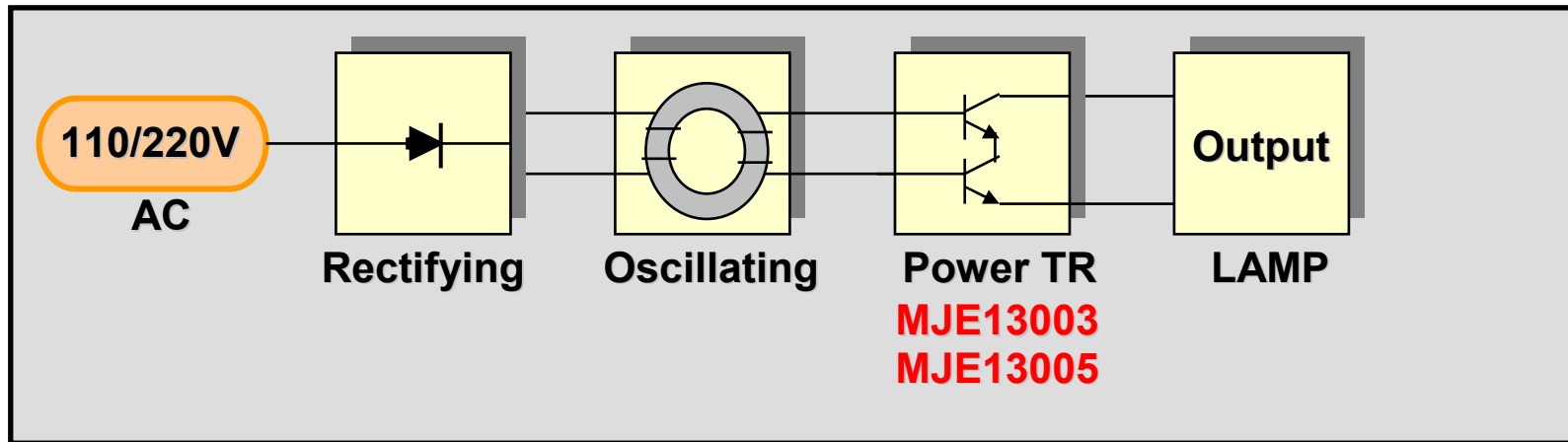
■ Device Line-up & PKG Dimension

Product	Max. Rating		V <sub>CE(SAT)</sub>	h <sub>FE</sub>	tstg	P <sub>C</sub>	PKG
	V <sub>CEO</sub> [V]	I <sub>C</sub> [A]					
KTC3003	400V	1.5A	Max. 0.5V @ I <sub>B</sub> =0.1A, I <sub>C</sub> =0.5A	9 ~ 21 @ I <sub>C</sub> =0.5A, V <sub>CE</sub> =2V	4us Max. @ I <sub>B</sub> =0.2A, I <sub>C</sub> =1A	1.1W @ T <sub>a</sub> =25°C	TO-92
MJE13003	400V	1.5A	Max. 0.5V @ I <sub>B</sub> =0.1A, I <sub>C</sub> =0.5A	9 ~ 21 @ I <sub>C</sub> =0.5A, V <sub>CE</sub> =2V	4us Max. @ I <sub>B</sub> =0.2A, I <sub>C</sub> =1A	20W @ T <sub>C</sub> =25°C	TO-126
MJE13005/F	400V	4A	Max. 0.5V @ I <sub>B</sub> =0.2A, I <sub>C</sub> =1A	18 ~ 39 @ I <sub>C</sub> =1A, V <sub>CE</sub> =5V	4us Max. @ I <sub>B</sub> =0.4A, I <sub>C</sub> =2A	75W / 30W @ T <sub>C</sub> =25°C	TO-220AB/IS
MJE13007/F	400V	8A	Max. 1V @ I <sub>B</sub> =0.4A, I <sub>C</sub> =2A	15 ~ 50 @ I <sub>C</sub> =2A, V <sub>CE</sub> =5V	3us Max. @ I <sub>B</sub> =1A, I <sub>C</sub> =5A	80W / 40W @ T <sub>C</sub> =25°C	TO-220AB/IS
MJE13009/F	400V	12A	Max. 1V @ I <sub>B</sub> =1A, I <sub>C</sub> =5A	8 ~ 28 @ I <sub>C</sub> =5A, V <sub>CE</sub> =5V	3us Max. @ I <sub>B</sub> =1.6A, I <sub>C</sub> =8A	100W / 50W @ T <sub>C</sub> =25°C	TO-220AB/IS
KTC5027/F	800V	3A	Max. 2V @ I <sub>B</sub> =0.3A, I <sub>C</sub> =1.5A	10 ~ 40 @ I <sub>C</sub> =0.2A, V <sub>CE</sub> =5V	3us Max. @ I <sub>C</sub> =2A	50W / 40W @ T <sub>C</sub> =25°C	TO-220AB/IS

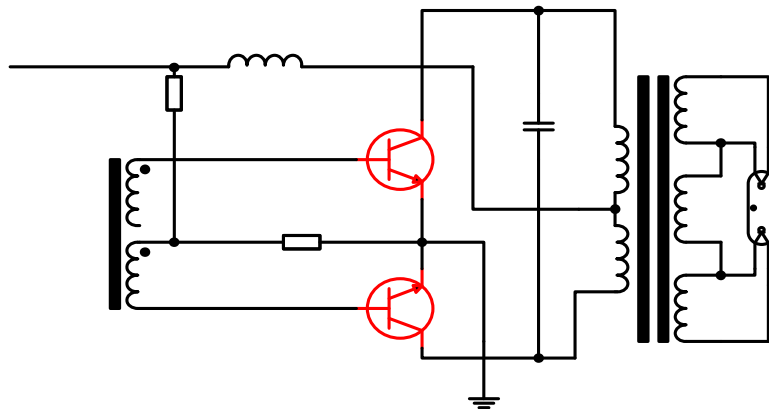
TO-92	TO-126	TO-220IS	TO-220AB																																																																								
 <table border="1" data-bbox="470 1133 604 1340"> <thead> <tr> <th>DIM</th> <th>MILLIMETERS</th> </tr> </thead> <tbody> <tr><td>A</td><td>4.70 MAX</td></tr> <tr><td>B</td><td>4.80 MAX</td></tr> <tr><td>C</td><td>3.70 MAX</td></tr> <tr><td>D</td><td>0.45</td></tr> <tr><td>E</td><td>1.00</td></tr> <tr><td>F</td><td>1.27</td></tr> <tr><td>G</td><td>0.85</td></tr> <tr><td>H</td><td>0.45</td></tr> <tr><td>J</td><td>14.00±0.50</td></tr> <tr><td>K</td><td>0.55 MAX</td></tr> <tr><td>L</td><td>2.30</td></tr> <tr><td>M</td><td>0.45 MAX</td></tr> <tr><td>N</td><td>1.00</td></tr> </tbody> </table>	DIM	MILLIMETERS	A	4.70 MAX	B	4.80 MAX	C	3.70 MAX	D	0.45	E	1.00	F	1.27	G	0.85	H	0.45	J	14.00±0.50	K	0.55 MAX	L	2.30	M	0.45 MAX	N	1.00		 <table border="1" data-bbox="1388 1005 1545 1404"> <thead> <tr> <th>DIM</th> <th>MILLIMETERS</th> </tr> </thead> <tbody> <tr><td>A</td><td>10.30 MAX</td></tr> <tr><td>B</td><td>15.30 MAX</td></tr> <tr><td>C</td><td>2.70±0.30</td></tr> <tr><td>D</td><td>0.85 MAX</td></tr> <tr><td>E</td><td>±0.20±0.20</td></tr> <tr><td>F</td><td>3.00±0.30</td></tr> <tr><td>G</td><td>12.30 MAX</td></tr> <tr><td>H</td><td>0.75 MAX</td></tr> <tr><td>J</td><td>13.50±0.50</td></tr> <tr><td>K</td><td>3.90 MAX</td></tr> <tr><td>L</td><td>1.20</td></tr> <tr><td>M</td><td>1.30</td></tr> <tr><td>N</td><td>2.54</td></tr> <tr><td>O</td><td>4.50±0.20</td></tr> <tr><td>P</td><td>6.80</td></tr> <tr><td>Q</td><td>2.60±0.20</td></tr> <tr><td>R</td><td>10°</td></tr> <tr><td>S</td><td>25°</td></tr> <tr><td>T</td><td>5°</td></tr> <tr><td>U</td><td>0.5</td></tr> <tr><td>V</td><td>2.60±0.15</td></tr> </tbody> </table>	DIM	MILLIMETERS	A	10.30 MAX	B	15.30 MAX	C	2.70±0.30	D	0.85 MAX	E	±0.20±0.20	F	3.00±0.30	G	12.30 MAX	H	0.75 MAX	J	13.50±0.50	K	3.90 MAX	L	1.20	M	1.30	N	2.54	O	4.50±0.20	P	6.80	Q	2.60±0.20	R	10°	S	25°	T	5°	U	0.5	V	2.60±0.15	
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**Suitable Application (Ballast)**

Compact Ballast



Ballast Circuit

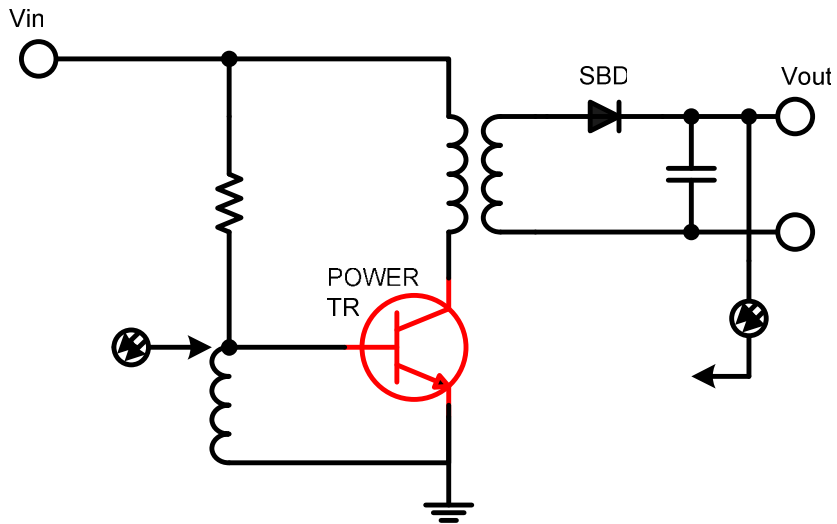


Suitable Device for Ballast

Device	Max. Rating	PKG
MJE13003	400V / 1.5A	TO-126
KTC3003	400V / 1.5A	TO-92
MJE13005/F	400V / 4A	TO-220IS/AB
MJE13007/F	400V / 8A	TO-220IS/AB

**Suitable Application (SMPS)**

□ **SMPS Circuit**



□ **Suitable Device for DC-DC Converter**

Device	Max. Rating	PKG
MJE13005/F	400V / 4A	TO-220IS/AB
MJE13007/F	400V / 8A	TO-220IS/AB
MJE13009/F	400V / 12A	TO-220IS/AB
KTC5027	800V / 3A	TO-220IS/AB

AC 110V

AC 220V

## Cross Reference

Product	Max. Rating	PKG	Cross Reference	Application set
	$V_{CEO}$ [V] / $I_C$ [A]			
KTC3003	400V / 1.5A	TO-92	<ul style="list-style-type: none"> <li>➤ STBV32(ST-Micro)</li> <li>➤ FJN13003(FSC)</li> <li>➤ BUJ100(Philips)</li> </ul>	Compact Ballast
MJE13003	400V / 1.5A	TO-126	<ul style="list-style-type: none"> <li>➤ FJE3303(FSC)</li> <li>➤ 2SC3550(Toshiba)</li> <li>➤ BUX86P(Philips)</li> </ul>	Ballast, SMPS
MJE13005/F	400V / 4A	TO-220AB/IS	<ul style="list-style-type: none"> <li>➤ KSE13005(FSC)</li> <li>➤ MJE13005(On-semi)</li> <li>➤ BUL128(ST-Micro)</li> </ul>	Ballast, SMPS
MJE13007/F	400V / 8A	TO-220AB/IS	<ul style="list-style-type: none"> <li>➤ FJP13007(FSC)</li> <li>➤ MJE13007(On-semi)</li> <li>➤ ST13007D(ST-Micro)</li> </ul>	Ballast, SMPS
MJE13009/F	400V / 12A	TO-220AB/IS	<ul style="list-style-type: none"> <li>➤ FJP13009(FSC)</li> <li>➤ MJE13009(On-semi)</li> <li>➤ BUL654T(ST-Micro)</li> </ul>	Low Cost SMPS, Halogen Lamps
KTC5027/F	800V / 3A	TO-220AB/IS	<ul style="list-style-type: none"> <li>➤ 2SC3752 (Sanyo)</li> <li>➤ 2SC5353 (Toshiba)</li> <li>➤ 2SC3979 (Panasonic)</li> </ul>	SMPS, CTV Monitor

**Ballast** 업체 정보 사항

거래선명	적용제품	VENDOR	생산량	업체동향
열기사	STD13005, 13003	FKS, ST	1,000K	>. SET 가격 하락으로 인한 채산성 저하로 생산 감소 (SET 가격 : 한국산 US\$ 2.00, 중국산 : US\$ 1.50) >. 13003(T0-126)에서 13005로 전환 생산 추세임 (25₩ 이상급)
두열전자		FKS	400K	
대성전자		FKS	400K	
정수조명		FKS, ST	500K	
필룩스		ST, PHI	250K	
금호전기		ST, 기타	200K	

▲ 그 이외 생산 제조 업체

- 오스람 코리아, (주)화승전기, (주)성일, (주)선광, 아림산업, 삼성전기 등