

## POWER MOS FETs (1)

The Sanyo J-MOS series utilizes Sanyo's own fine fabrication process for power devices to develop an entire series of ultrahigh performance power devices capable of high voltage, high speed and large current operation. With performance of wide applications for virtually any types of power electronic equipment, the UH Series, AP Series and LD Series offer the most suitable devices to meet specific needs.

In addition to the above we have Small-signal MOSFETs. See other pages.

### UH Series (Ultra High-Voltage)

The UH Series, an ultrahigh voltage series with a world-top-class VDSS of 1500V employs a UH process. This UH process is an application of Sanyo's original bipolar process to the minute MOS process.

UH process technology \*Low (Ciss), ultrahigh voltage, MOS unit cell design. \*Adoption of precisely doped silicon wafers. \*Adoption of the original protection film has achieved higher reliability. \*Optimum design of a guard-ring structure.

VDSS 900V, 1000V, 1200V system  
(\*:PD value at Tc=25°C) \* RDS(on):VGS=10V.

Type No.	Package	Absolute Maximum Ratings /Ta=25°C					Electrical Characteristics/Ta=25°C			Type No.
		V <sub>DSS</sub> (V)	V <sub>GSS</sub> (V)	I <sub>D</sub> (A)	I <sub>DP</sub> (A)	* P <sub>D</sub> (W)	V <sub>GS(off)</sub> (V)	* R <sub>DS(on)</sub> typ/max (Ω)	C <sub>iss</sub> typ (PF)	
2SK1455 2SK1456 2SK1457	TO-220	900	±30	0.2	0.4	30	2~3	50/70	45	2SK1455
				3	6	60		4.7/6	350	2SK1456
				5	10	70		2.8/3.6	700	2SK1457
2SK1458LS 2SK1459LS 2SK1460LS	TO-220F1 (LS)			0.2	0.4	20		50/70	45	2SK1458LS
				2.5	5	30		4.7/6	350	2SK1459LS
				3.5	7	40		2.8/3.6	700	2SK1460LS
2SK2083	SMP			5	10	70		2.8/3.6	700	2SK2083
2SK1461 2SK1462	TO-3PB			5	10	120		2.8/3.6	700	2SK1461
				8	16	150		1.2/1.6	1600	2SK1462
2SK1463 2SK1464	TO-3PML			4.5	9	60		2.8/3.6	700	2SK1463
				8	16	80		1.2/1.6	1600	2SK1464
2SK1465 2SK1466	TO-3PBL			8	16	200		1.2/1.6	1600	2SK1465
		16	32	250	0.6/0.8	3200	2SK1466			
2SK2347 2SK2348	TO-3JML	1000 1200	±30 ±30	20 14	40 28	160 160	1.5~3.5	0.6/0.8 1.0/1.5	3300 3000	2SK2347 2SK2348

### VDSS 1500V system

Type No.	Package	V <sub>DSS</sub> (V)	V <sub>GSS</sub> (V)	I <sub>D</sub> (A)	I <sub>DP</sub> (A)	* P <sub>D</sub> (W)	V <sub>GS(off)</sub> (V)	* R <sub>DS(on)</sub> typ/max (Ω)	C <sub>iss</sub> typ (PF)	Type No.
2SK1412LS	TO-220F1 (LS)	1500	±20	0.1	0.2	20	1.5~3.5	140/200	40	2SK1412LS
2SK1413	TO-3PML			2	4	60		8/11	550	2SK1413
2SK2349	TO-3JML			10	20	160		1.5/2.5	2900	2SK2349

### AP Series (Advanced Performance)

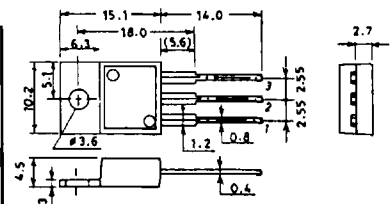
The AP Series provides an on-state resistance approximately 40% lower than the existing J-MOS series. A precisely controlled, channel forming process is used to achieve a threshold value variation width of 0.5V resulting in easy parallel connection operation essential for large current circuits. (VGS±30V guaranteed in VDSS 450V series.) Designed as a power MOSFET with well-balanced characteristics, the AP Series provides the ultimate in high-power performance. The surface mounting SMP package enables higher density assembly and higher reliability.

VDSS 60V system (\*:PD value at Tc=25°C) \*RDS(on):VGS=10V.

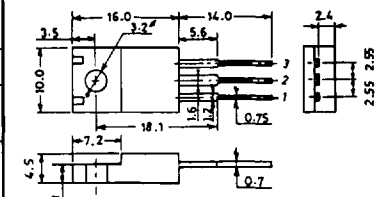
Type No.	Package	Absolute Maximum Ratings /Ta=25°C					Electrical Characteristics/Ta=25°C			Type No.
		V <sub>DSS</sub> (V)	V <sub>GSS</sub> (V)	I <sub>D</sub> (A)	I <sub>DP</sub> (A)	* P <sub>D</sub> (W)	V <sub>GS(off)</sub> (V)	* R <sub>DS(on)</sub> typ/max (Ω)	C <sub>iss</sub> typ (PF)	
2SK1416 2SK1417 2SK1418	TO-220	60	±20	15	60	40	1.5~2.5	60m/80m	750	2SK1416
				25	100	60		35m/45m	1200	2SK1417
				40	160	70		20m/26m	2400	2SK1418
2SK1419 2SK1420 2SK1421	TO-220ML			15	60	25		60m/80m	750	2SK1419
				25	100	30		35m/45m	1200	2SK1420
				40	160	40		20m/26m	2400	2SK1421
2SK1871	SMP			15	60	40		60m/80m	800	2SK1871
2SK1422 2SK1423	TO-3PB			50	200	100		20m/26m	2400	2SK1422
				80	320	150		12m/16m	4800	2SK1423
2SK1424 2SK1425	TO-3PML			40	160	60		20m/26m	2400	2SK1424
				60	240	80		12m/16m	4800	2SK1425
2SK1426	TO-3PBL			100	400	200		8m/12m	7200	2SK1426

Precaution © Take care to prevent device breakage from static electricity because MOSFET, cannot withstand much static electricity.

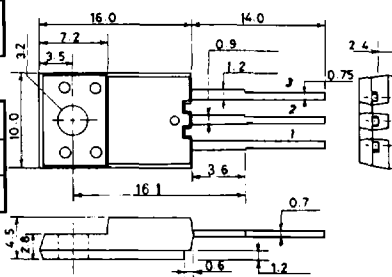
Case Outlines (unit:mm)  
SANYO:TO-220  
1:Gate, 2:Drain, 3:Source



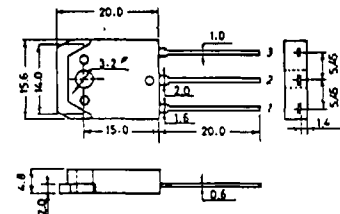
SANYO:TO-220ML



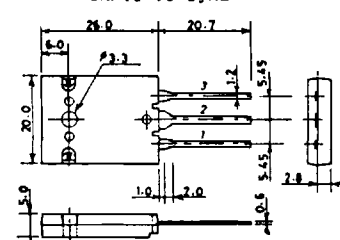
SANYO:TO-220F1 (LS)



SANYO:TO-3PB



SANYO:TO-3JML



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## POWER MOS FETs (2)

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### AP Series (Advanced Performance)

Case Outlines (unit:mm)

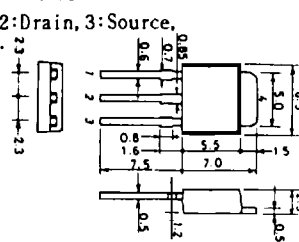
VDSS 100V system (\*:PD value at Tc=25°C)

\*RDS(on):VGS=10V

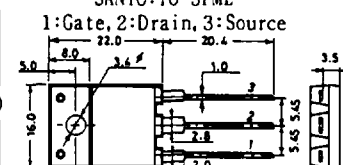
1:Gate, 2:Drain, 3:Source, 4:Drain.

Type No.	Package	Absolute Maximum Ratings				Electrical Characteristics/Ta=25°C			Type No.	
		V <sub>DSS</sub> (V)	V <sub>GSS</sub> (V)	I <sub>D</sub> (A)	I <sub>DP</sub> (A)	*P <sub>D</sub> (W)	V <sub>GS(off)</sub> (V)	*R <sub>DS(on)</sub> typ/max (Ω)		C <sub>iss</sub> typ (PF)
2SK1427 2SK1428 2SK1429	TO-220	100	±20	10	40	40	1.5~2.5	0.12/0.16	750	2SK1427
				20	80	60		75m/100m	1200	2SK1428
				30	120	70		40m/55m	2400	2SK1429
2SK1430 2SK1431 2SK1432	TO-220ML			10	40	25		0.12/0.16	750	2SK1430
				15	60	30		75m/100m	1200	2SK1431
				25	100	40		40m/55m	2400	2SK1432
2SK1433 2SK1434	TO-3PB			30	120	100		40m/55m	2400	2SK1433
				60	240	150		23m/35m	4800	2SK1434
2SK1435 2SK1436	TO-3PML			30	120	60		40m/55m	2400	2SK1435
				50	200	80		23m/35m	4800	2SK1436
2SK1437	TO-3PBL			70	280	200		16m/26m	7200	2SK1437

SANYO-TT



SANYO:TO-3PML

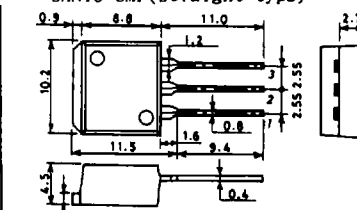


VDSS 200V, 250V system

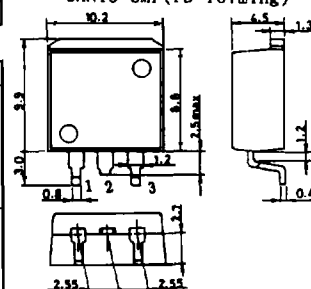
(2SJ type:P channel (-) sign is omitted.)

2SJ403 2SJ404 2SJ405 2SJ406	TO-220ML	200	±20	5	20	25	1.5~2.5	0.8/1.1	550	2SJ403
				6	24	25		0.6/0.8	700	2SJ404
				8	32	30		0.37/0.5	1100	2SJ405
				12	48	40		0.17/0.23	2400	2SJ406
2SK2160 2SK2161 2SK2378 2SK2379								7	28	25
				9	36	25	0.25/0.35	700	2SK2161	
				13	52	30	0.16/0.21	1100	2SK2378	
				20	80	40	70m/95m	2400	2SK2379	
2SJ282 2SK1921 2SK2142	TO-220			3	12	50	1.5~2.5	1.5/2	600	2SJ282
				4	16	50		0.5/0.7	600	2SK1921
				12	48	70		0.25/0.35	1250	2SK2142
2SJ306 2SJ307 2SJ308 2SJ320	TO-220ML	250	±30	3	12	25	1.5~2.5	1.5/2	600	2SJ306
				6	24	30		0.75/1	1250	2SJ307
				9	36	40		0.35/0.48	2700	2SJ308
				4	16	25		1/1.3	750	2SJ320
2SK2010 2SK2011 2SK2012 2SK2108				4	16	25	1.5~2.5	0.5/0.7	600	2SK2010
				12	48	30		0.25/0.35	1250	2SK2011
				18	72	40		0.12/0.16	2700	2SK2012
				6	24	25		0.38/0.5	750	2SK2108
2SK2321	SMP			12	48	70		0.25/0.35	1250	2SK2321
2SK2058	TO-3PB			25	100	120		0.12/0.16	2700	2SK2058

SANYO:SMP(straight type)



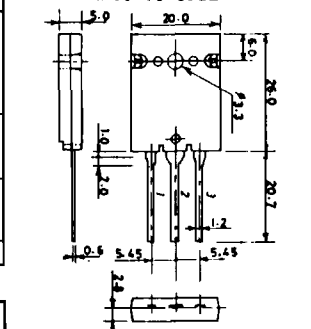
SANYO:SMP(FD forming)



VDSS 450V system

2SK2406	TP			1	4	30	2~3	3.5/4.5	300	2SK2406
2SK1438	TO-220			0.3	1.2	20		9/12	90	2SK1438
2SK1439				3	12	50		2/2.6	400	2SK1439
2SK1440				5	20	60		1/1.4	700	2SK1440
2SK1441				8	32	70		0.6/0.8	1200	2SK1441
2SK1442				12	48	70		0.47/0.6	1600	2SK1442
2SK2407				10	40	70		0.55/0.75	1500	2SK2407
2SK1443LS 2SK1444LS 2SK1445LS 2SK1446LS 2SK1447LS	TO-220FI(LS)			1	4	20		3.5/4.5	250	2SK1443LS
				3	12	25		2.0/2.6	400	2SK1444LS
				5	20	30		1/1.4	700	2SK1445LS
				7	28	35		0.6/0.8	1200	2SK1446LS
				9	36	40		0.47/0.6	1600	2SK1447LS
2SJ458 2SJ459				2	8	60	4/5.5	700	2SJ458	
				4	16	70	2/2.8	1500	2SJ459	
2SK1690 2SK1691 2SK2403 2SK2404 2SK2405	SMP			3	12	50	2/2.6	400	2SK1690	
				5	20	60	1/1.4	700	2SK1691	
				3	12	50	2.4/3.2	400	2SK2403	
				5	20	60	1.2/1.6	700	2SK2404	
				10	40	70	0.55/0.75	1500	2SK2405	
2SK1448 2SK1449 2SK1450	TO-3PB			8	32	100	0.6/0.8	1200	2SK1448	
				12	48	120	0.47/0.6	1600	2SK1449	
				20	80	150	0.24/0.3	3200	2SK1450	
2SK1451 2SK1452 2SK1453	TO-3PML			8	32	50	0.6/0.8	1200	2SK1451	
				10	40	60	0.47/0.6	1600	2SK1452	
				16	64	70	0.24/0.3	3200	2SK1453	
2SK1454	TO-3PBL			30	120	250	0.12/0.16	6400	2SK1454	

SANYO:TO-3PBL



VDSS 600V system

2SK1922 2SK1923 2SK1924	TO-220			2	8	50	2~3	3.2/4.3	400	2SK1922	
				4	16	60		1.8/2.4	700	2SK1923	
				6	24	70		1.1/1.5	1100	2SK1924	
2SK2043LS 2SK2044LS 2SK2045LS	TO-220FI(LS)			2	8	25		3.2/4.3	400	2SK2043LS	
				4	16	30		1.8/2.4	700	2SK2044LS	
				5.5	22	35		1.1/1.5	1100	2SK2045LS	
2SK2227	SMP			4	16	60			1.8/2.4	700	2SK2227
2SK1925	TO-3PB			8	32	120			0.9/1.2	1500	2SK1925

#### Precaution

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## Power MOS FETs (3)

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### LD series (Low Drive)

The LD Series, an ingenious hybrid of the LSI-class fine process and the power process, has higher transfer characteristics and lower on-state resistance. The result is a low voltage drive series which saturates at a VGS bias of 4V.  
 This series is most effective for a power supply controlled by a 5V drive logic IC.  
 The surface mounting SMP package enables higher density assembly and higher reliability.

### VDSS 30V system

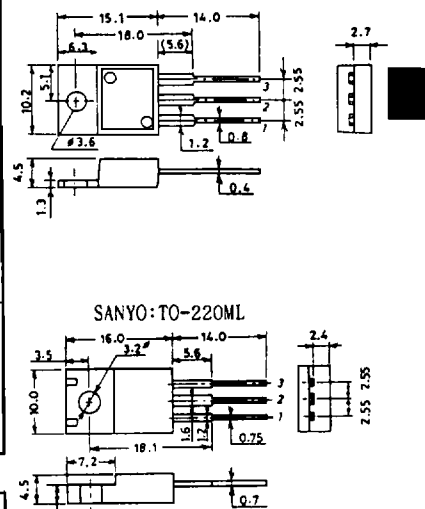
(\*: PD value at Tc=25°C) (2SJ type:P channel (-) sign is omitted.)

\* sign RDS(on):VGS=10V.

Type No.	Type No.	Absolute Maximum Ratings					Electrical Characteristics/Ta=25°C			Type No.
		V <sub>DSS</sub> (V)	V <sub>GSS</sub> (V)	I <sub>D</sub> (A)	I <sub>DP</sub> (A)	* P <sub>D</sub> (W)	V <sub>GS(off)</sub> (V)	* R <sub>DS(on)</sub> typ/max (Ω)	C <sub>iss</sub> typ (PF)	
2SJ251 2SJ252 2SJ253 2SK1883 2SK1884 2SK1885	TO-220	30	+15	10	40	50	1 ~ 2	85m/120m	1000	2SJ251
+20			12	48	60	70m/95m		1300	2SJ252	
+15			20	80	70	40m/55m		2000	2SJ253	
+15			18	72	50	40m/55m		1000	2SK1883	
+20			22	88	60	30m/40m		1300	2SK1884	
+15			35	140	70	15m/25m		2000	2SK1885	
2SJ254 2SJ255 2SJ256 2SK1886 2SK1887 2SK1888	TO-220ML	30	+15	8	32	25	1 ~ 2	85m/120m	1000	2SJ254
+20			10	40	25	70m/95m		1300	2SJ255	
+15			18	72	30	40m/55m		2000	2SJ256	
+15			15	60	25	40m/55m		1000	2SK1886	
+20			20	80	25	30m/40m		1300	2SK1887	
+15			30	120	30	15m/25m		2000	2SK1888	
2SJ257 2SJ258 2SJ259 2SJ400 2SK1889 2SK1890 2SK1891	SMP	30	+15	10	40	50	1 ~ 2	85m/120m	1000	2SJ257
+20			12	48	60	70m/95m		1300	2SJ258	
+20			20	80	70	40m/55m		2000	2SJ259	
+20			35	140	70	40m/55m		4000	2SJ400	
+15			18	72	50	40m/55m		1000	2SK1889	
+20			22	88	60	30m/40m		1300	2SK1890	
+15			35	140	70	15m/25m		2000	2SK1891	

Case Outlines(unit:mm)

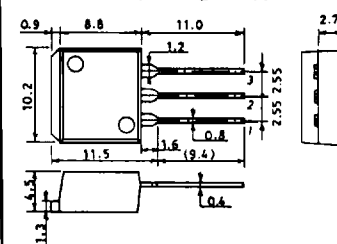
SANYO:TO-220  
1:Gate, 2:Drain, 3:Source



### VDSS 60V system

2SJ260 2SJ261 2SJ262 2SJ348 2SK1892 2SK1893 2SK1894	TO-220	60	+15	8	32	50	1 ~ 2	0.15/0.2	950	2SJ260
+20			10	40	60	0.11/0.15		1230	2SJ261	
+15			18	72	70	60m/80m		1900	2SJ262	
+20			30	120	70	30m/40m		3800	2SJ348	
+15			15	60	50	60m/80m		950	2SK1892	
+20			18	72	60	50m/70m		1230	2SK1893	
+15			30	120	70	30m/40m		1900	2SK1894	
2SJ263 2SJ264 2SJ265 2SJ339 2SK1895 2SK1896 2SK1897 2SK2163	TO-220ML	60	+15	6	24	25	1 ~ 2	0.15/0.2	950	2SJ263
+20			8	32	25	0.11/0.15		1230	2SJ264	
+15			15	60	30	60m/80m		1900	2SJ265	
+20			25	100	40	30m/40m		3800	2SJ339	
+15			12	48	25	60m/80m		950	2SK1895	
+20			15	60	25	50m/70m		1230	2SK1896	
+15			25	100	30	30m/40m		1900	2SK1897	
+20			40	160	40	15m/20m		3800	2SK2163	
2SJ266 2SJ267 2SJ268 2SJ340 2SK1898 2SK1899 2SK1900 2SK2164	SMP	60	+15	8	32	50	1 ~ 2	0.15/0.2	950	2SJ266
+20			10	40	60	0.11/0.15		1230	2SJ267	
+15			18	72	70	60m/80m		1900	2SJ268	
+20			30	120	70	30m/40m		3800	2SJ340	
+15			15	60	50	60m/80m		950	2SK1898	
+20			18	72	60	50m/70m		1230	2SK1899	
+15			30	120	70	30m/40m		1900	2SK1900	
+20			45	180	70	15m/20m		3800	2SK2164	
2SJ413			TO-3PML		+20	50		200	70	

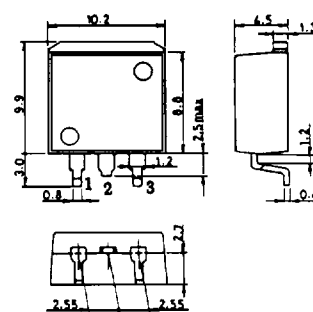
SANYO:SMP (Straight type)



### VDSS 100V system

2SJ269 2SJ270 2SJ271 2SK1901 2SK1902 2SK1903	TO-220	100	+15	6	24	50	1 ~ 2	0.3/0.4	950	2SJ269
+20			8	32	60	0.22/0.3		1230	2SJ270	
+15			15	60	70	0.12/0.16		1900	2SJ271	
+15			12	48	50	0.12/0.16		950	2SK1901	
+20			15	60	60	0.1/0.135		1230	2SK1902	
+15			25	100	70	60m/80m		1900	2SK1903	
2SJ272 2SJ273 2SJ274 2SK1904 2SK1905 2SK1906	TO-220ML	100	+15	4	16	25	1 ~ 2	0.3/0.4	950	2SJ272
+20			6	24	25	0.22/0.3		1230	2SJ273	
+15			12	48	30	0.12/0.16		1900	2SJ274	
+15			10	40	25	0.12/0.16		950	2SK1904	
+20			12	48	25	0.1/0.135		1230	2SK1905	
+15			20	80	30	60m/80m		1900	2SK1906	
2SJ275 2SJ276 2SJ277 2SK1907 2SK1908 2SK1909	SMP	100	+15	6	24	50	1 ~ 2	0.3/0.4	950	2SJ275
+20			8	32	60	0.22/0.3		1230	2SJ276	
+15			15	60	70	0.12/0.16		1900	2SJ277	
+15			12	48	50	0.12/0.16		950	2SK1907	
+20			15	60	60	0.1/0.135		1230	2SK1908	
+15			25	100	70	60m/80m		1900	2SK1909	

SANYO:SMP (FD Forming type)



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Next page. (New package ZP)