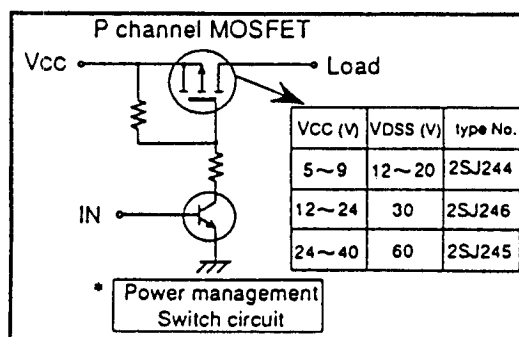


5.7 Power Conversion (3)

Power Management Switch for Battery Operating Equipment



D-IV L Series

Item	Package	Type	Rating		RDS(on) max		
			Vdss(V)	Id(A)	4V(Ω)	10V(Ω)	
Pch	UPAK	2SJ317	-12	-2	0.4	***	2.5v drive
	TO-126FM	2SJ298	-20	-5	***	0.12	
		2SJ300		-10	***	0.08	
	DPAK	2SJ299		-5	***	0.12	
	UPAK	2SJ278	-60	-1	1.2	0.83	
	DPAK	2SJ279		-5	0.27	0.2	
	TO-220AB	2SJ290		-15	0.12	0.095	
		2SJ291		-20	0.095	0.065	
		2SJ192		-30	0.06	0.043	
	TO-220FM	2SJ293		-15	0.12	0.095	
		2SJ294		-20	0.095	0.065	
		2SJ295		-30	0.06	0.043	
	LDBAK	2SJ296		-15	0.12	0.095	
		2SJ297		-20	0.095	0.065	
		2SJ280		-30	0.06	0.043	
Nch	DPAK	2SK1949	60	5	0.2	0.15	2.5v drive
		2SK1950		3	0.3	0.25	
	TO-220AB	2SK1910		25	0.06	0.04	
		2SK1911		40	0.028	0.022	
	TO-220FM	2SK1951		25	0.06	0.04	
		2SK1952		40	0.028	0.022	
	LDBAK	2SK1918		25	0.06	0.04	
		2SK1919		40	0.028	0.022	

D-III L Series

Item	Package	Type	Rating		RDS(on) max		
			Vdss(V)	Id(A)	4V(Ω)	10V(Ω)	
Pch	UPAK	2SJ244	-12	-2	0.7	***	2.5v drive
	DPAK	2SJ234	-30	-2.5	0.7	0.4	
		2SJ246		-7	0.25	0.17	
		2SJ223		-2	1.1	0.7	
		2SJ182		-3	0.5	0.4	
		2SJ245		-5	0.38	0.25	
	LDBAK	2SJ214	-60	-10	0.25	0.18	
		2SJ219		-15	0.17	0.11	
		2SJ220		-20	0.13	0.085	
		2SJ242		-30	0.09	0.06	
	TO-220FM	2SJ175		-10	0.25	0.18	
		2SJ176		-15	0.17	0.11	
		2SJ177		-20	0.13	0.085	
		TO-3P		2SJ215	-35	0.09	
	TP-3PFM	2SJ216	-35	0.09	0.06		
Nch	UPAK	2SK1579	12	2	0.35	***	2.5v drive
		2SK1772	30	1	0.85	0.6	
		2SK1697	60	0.3	2.5	1.7	
		2SK1764	2	0.55	0.4		
	DPAK	2SK1763	30	2.5	0.6	0.35	
		2SK973	60	2	0.5	0.35	
		2SK974		3	0.25	0.18	
	LDBAK	2SK1645		15	0.095	0.065	
		2SK1622		25	0.06	0.04	
		2SK1093		10	0.22	0.15	
	TO-220FM	2SK1094		15	0.095	0.065	
		2SK1095		25	0.06	0.04	

1.5.3 DIII-Series

The third generation of D-Series MOSFETs from Hitachi benefits from the latest development in Power MOSFET technology.

This series extends the 'manageable MOSFET' theme by offering some important new features. Hitachi's has kept pace with the expansion of power MOSFET needs by increasing performance and expanding an impressive line-up of devices.

Until now, the N-channel MOSFET has been the main pillar of this line-up, but now such demands as expanded applicability, smaller equipment configurations and simplification of circuitry is switching focus to the P-channel MOSFET. To meet such needs, Hitachi has extended the P-channel power MOSFET DIII-L series.

DIII-L Series

(Low Voltage Range, V_{DS} up to 120V)

The low voltage range of DIII-Series MOSFETs has the following enhanced features:-

- Low 'ON-STATE' resistance, $R_{DS(ON)}$
- Logic level drive capabilities
- Reduced $R_{DS(ON)}$ temperature dependant
- Narrow threshold voltage, V_{TH}
- Built-in back to back zener diodes for ESD protection

The result of logic level drive is a device which can be completely controlled, fully off to fully on from a microprocessor or logic IC without the need for cumbersome interfacing circuitry.

Table 6 : DIII-L Series Typical Characteristics

Package	Type Number	Absolute Maximum Ratings				Electrical Characteristics (typ.)								
		VDSS (V)	VGSS (V)	ID (A)	Pch * (W)	4V RDS(on)** (Ω)		10V RDS(on)** (Ω)		lyfs (S) **	ton (ns)	toff (ns)	Ciss (pF)	
						typ.	max.	typ.	max.					
UPAK	2SJ244	-12	± 7	-2	1	0.5	0.7	-	-	1.8	365	1450	130	
	2SK1579	12		2	1	0.25	0.35	-	-	2.5	500	1500	110	
	2SK1772	30		1	1	0.6	0.85	0.4	0.6	1	25	70	85	
	2SK1697	60	± 20	0.5	1	1.8	2.5	1.3	1.7	0.38	12	32	30	
	2SK1698	100		0.3	1	4.5	6.5	3.5	4.5	0.35	6	32	35	
	2SK1764	60		2	1	0.4	0.6	0.3	0.45	1.7	18	80	140	
TO-92	2SK1336	60	± 20	0.3	0.4	1.8	2.5	1.3	1.7	0.35	6	34	33	
	2SK1337	100		0.3	0.4	4	6.5	3.5	4.5	0.35	6	32	35	
TO-92M	2SK975	60	± 20	1.5	0.9	0.4	0.55	0.3	0.4	1.5	15	80	140	
TO-126	2SK1270	60	± 20	2	10	0.4	0.55	0.3	0.4	1.5	15	80	140	
TO-126M	2SJ250	-60	± 20	-10	12	0.19	0.26	0.14	0.19	6.5	73	275	900	
	2SK1877	60		10	12	0.085	0.105	0.065	0.075	7.5	60	295	860	
	2SK1878	100		10	12	0.14	0.19	0.11	0.14	8.5	65	270	860	
DPAK	2SJ234	-30	± 20	-2.5	10	0.5	0.7	0.3	0.4	1.8	32	157	245	
	2SJ246			-7	20	0.21	0.31	0.12	0.17	5	65	270	560	
	2SJ223			-2	10	0.7	1.1	0.5	0.7	1.5	24	140	230	
	2SJ182	-60		-3	20	0.35	0.5	0.28	0.4	2.7	35	245	425	
	2SJ235			-3	20	0.35	0.5	0.28	0.4	2.7	-	-	425	
	2SJ245			-5	20	0.28	0.38	0.2	0.25	3.7	57	260	610	
	2SK1763	30		2.5	10	0.42	0.6	0.27	0.35	1.8	27	97	155	
	2SK973	60		2	10	0.4	0.5	0.25	0.35	2	19	120	240	
	2SK974			3	20	0.2	0.25	0.15	0.18	4	30	255	400	
	2SK1299	100		3	20	0.3	0.45	0.25	0.35	4	40	220	400	
	2SK1254	120		3	20	0.35	0.55	0.3	0.4	4	25	195	420	
	LDBAK	2SJ214		-60	± 20	-10	40	0.18	0.25	0.13	0.18	6.5	73	275
2SJ219		-15				50	0.13	0.17	0.09	0.11	9.5	135	380	1400
2SJ220		-20				75	0.09	0.13	0.065	0.085	13	140	580	1850
2SJ242		30				75	0.07	0.09	0.045	0.06	20	195	780	2400
2SK1648		60		15		40	0.075	0.095	0.055	0.065	12	80	300	860
2SK1622				25		50	0.05	0.06	0.033	0.04	20	145	450	1400
2SK1623				100		20	50	0.85	0.12	0.065	0.085	16	112	450

Notes :

* : Value at $T_c = 25^\circ\text{C}$

** : Test condition $R_{DS(on)}$: $V_{GS} = 4V, 10V, I_D = \frac{1}{2}, I_{D \text{ max}}$ (DC)

*** : High Electro-Static Breakdown Capability Series

I_{yfsi} : $V_{DS} = 10V, I_D = \frac{1}{2}, I_{D \text{ max}}$ (DC)