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# SFT1342

## Power MOSFET

–60V, 62mΩ, –12A, Single P-Channel

### Features

- Low On-Resistance
- Low Gate Charge
- Pb-free and RoHS Compliance
- High Speed Switching
- ESD Diode-Protected Gate

### Specifications

**Absolute Maximum Ratings** at  $T_a = 25^\circ\text{C}$

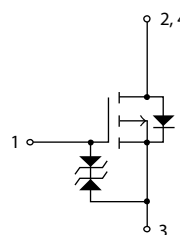
Parameter	Symbol	Value	Unit
Drain to Source Voltage	$V_{DS}$	–60	V
Gate to Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current (DC)	$I_D$	–12	A
Drain Current $PW \leq 10\mu\text{s}$ , duty cycle $\leq 1\%$	$I_{DP}$	–48	A
Power Dissipation	$P_D$	1.0	W
		15	W
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	–55 to +150	$^\circ\text{C}$

### Thermal Resistance Ratings

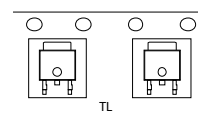
Parameter	Symbol	Value	Unit
Junction to Case Steady State	$R_{\theta JC}$	8.33	$^\circ\text{C/W}$
Junction to Ambient *1	$R_{\theta JA}$	125	

Note : \*1 Insertion mounted

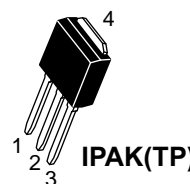
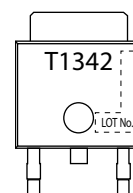
### Electrical Connection P-Channel



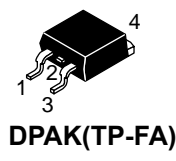
### Packing Type: TL



### Marking



IPAK(TP)



DPAK(TP-FA)

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### ORDERING INFORMATION

See detailed ordering and shipping information on page 6 of this data sheet.

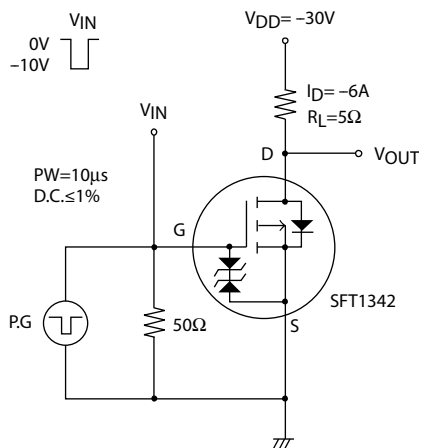
# SFT1342

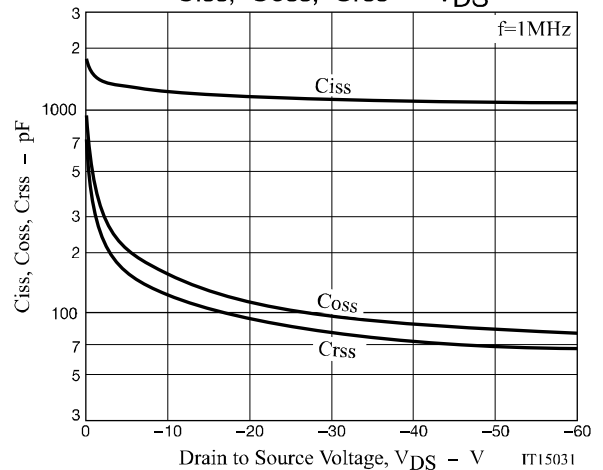
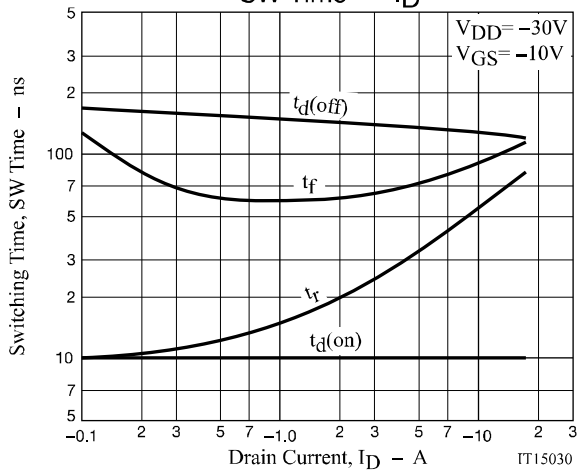
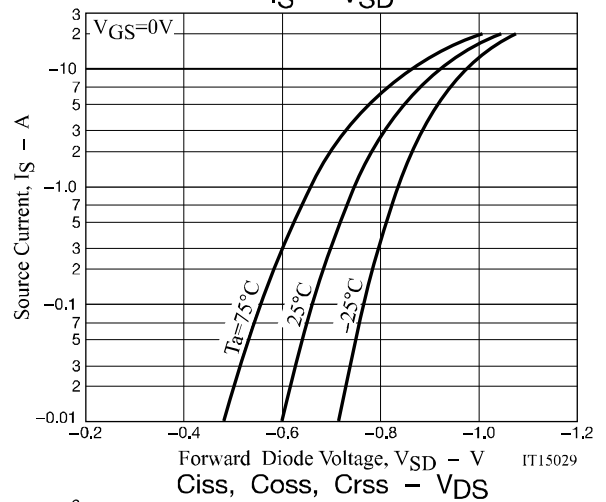
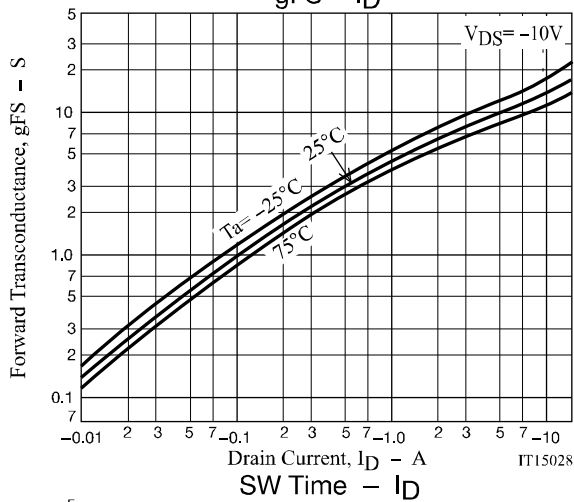
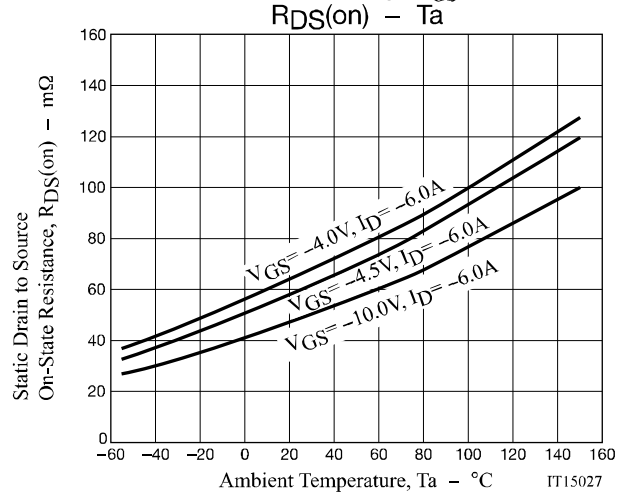
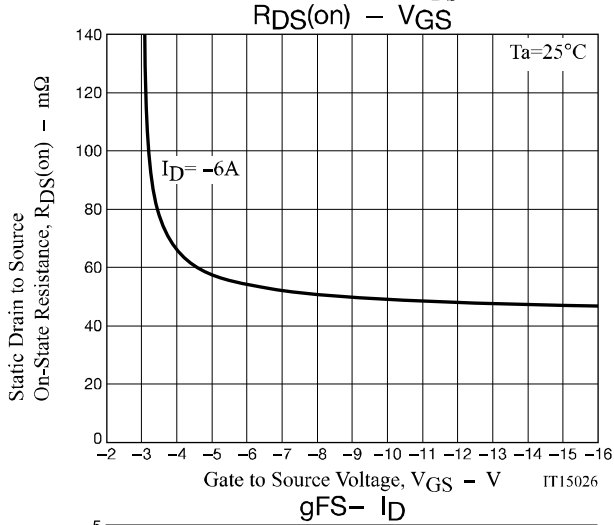
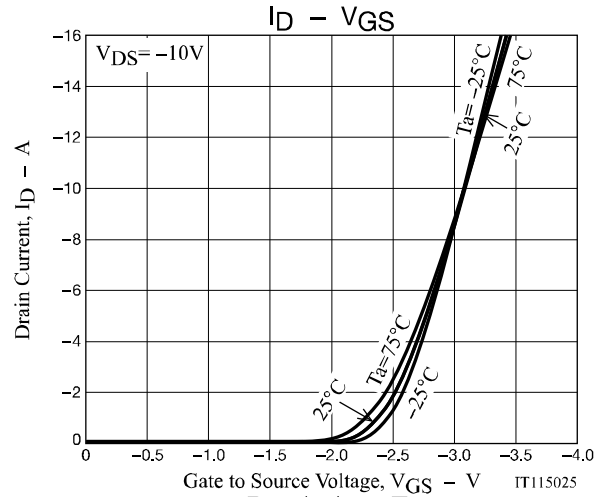
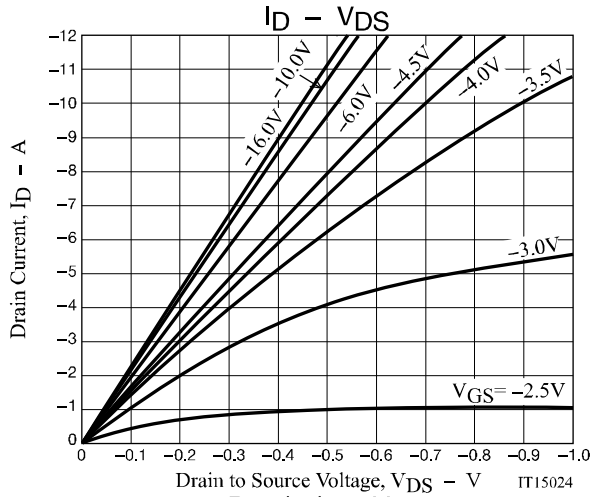
## Electrical Characteristics at $T_a = 25^\circ\text{C}$

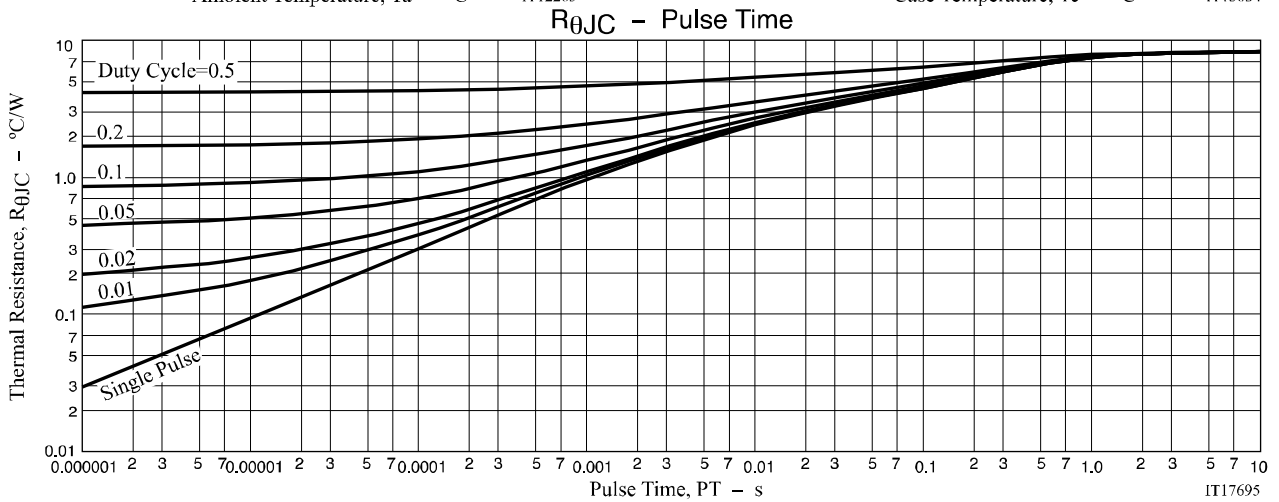
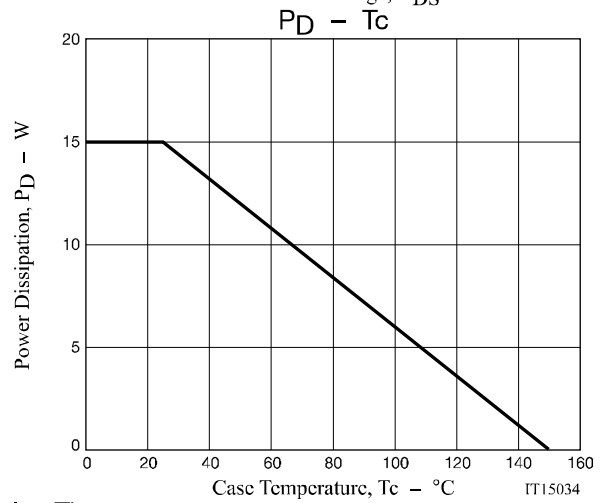
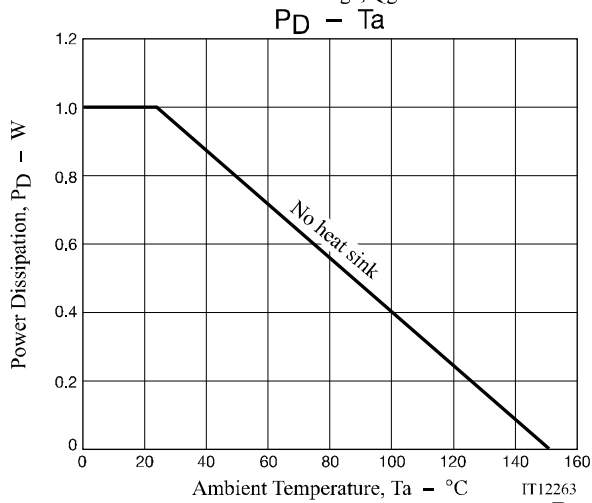
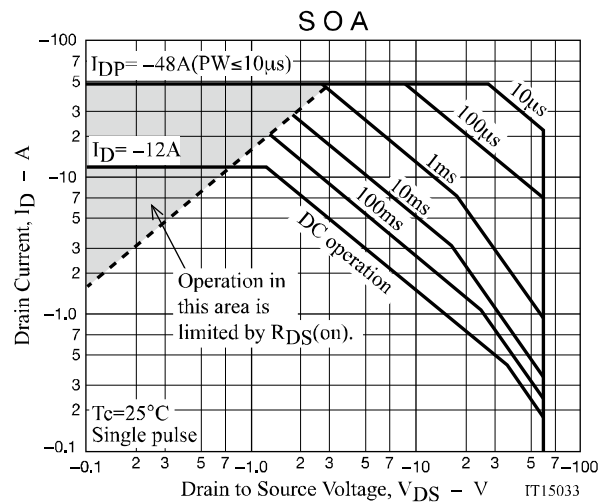
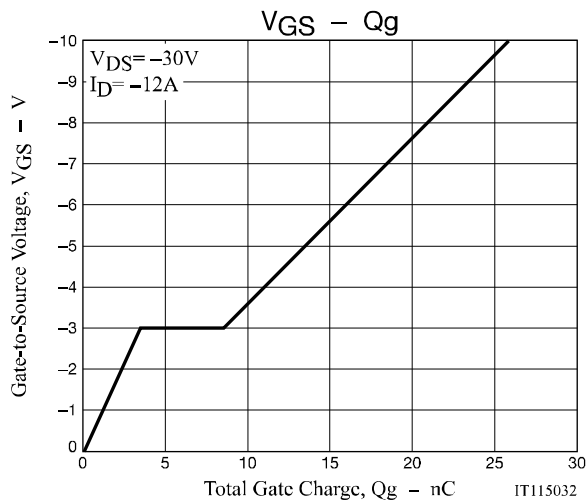
Parameter	Symbol	Conditions	Value			Unit
			min	typ	max	
Drain to Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}$ , $V_{GS} = 0\text{V}$	-60			V
Zero-Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -60\text{V}$ , $V_{GS} = 0\text{V}$			-1	$\mu\text{A}$
Gate to Source Leakage Current	$I_{GSS}$	$V_{GS} = \pm 16\text{V}$ , $V_{DS} = 0\text{V}$			$\pm 10$	$\mu\text{A}$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = -10\text{V}$ , $I_D = -1\text{mA}$	-1.2		-2.6	V
Forward Transconductance	$g_{FS}$	$V_{DS} = -10\text{V}$ , $I_D = -6\text{A}$		11		S
Static Drain to Source On-State Resistance	$R_{DS(on)1}$	$I_D = -6\text{A}$ , $V_{GS} = -10\text{V}$		47	62	$\text{m}\Omega$
	$R_{DS(on)2}$	$I_D = -6\text{A}$ , $V_{GS} = -4.5\text{V}$		62	87	$\text{m}\Omega$
	$R_{DS(on)3}$	$I_D = -6\text{A}$ , $V_{GS} = -4\text{V}$		68	96	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -20\text{V}$ , $f = 1\text{MHz}$		1150		pF
Output Capacitance	$C_{oss}$			115		pF
Reverse Transfer Capacitance	$C_{rss}$			95		pF
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit.		10		ns
Rise Time	$t_r$			37		ns
Turn-OFF Delay Time	$t_{d(off)}$			135		ns
Fall Time	$t_f$			75		ns
Total Gate Charge	$Q_g$	$V_{DS} = -30\text{V}$ , $V_{GS} = -10\text{V}$ , $I_D = -12\text{A}$		26		nC
Gate to Source Charge	$Q_{gs}$			3.5		nC
Gate to Drain "Miller" Charge	$Q_{gd}$			5		nC
Forward Diode Voltage	$V_{SD}$	$I_S = -12\text{A}$ , $V_{GS} = 0\text{V}$		-0.95	-1.2	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

## Switching Time Test Circuit







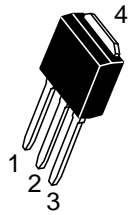


## Package Dimensions

SFT1342-E/ SFT1342-W

### IPAK/TP

Unit : mm

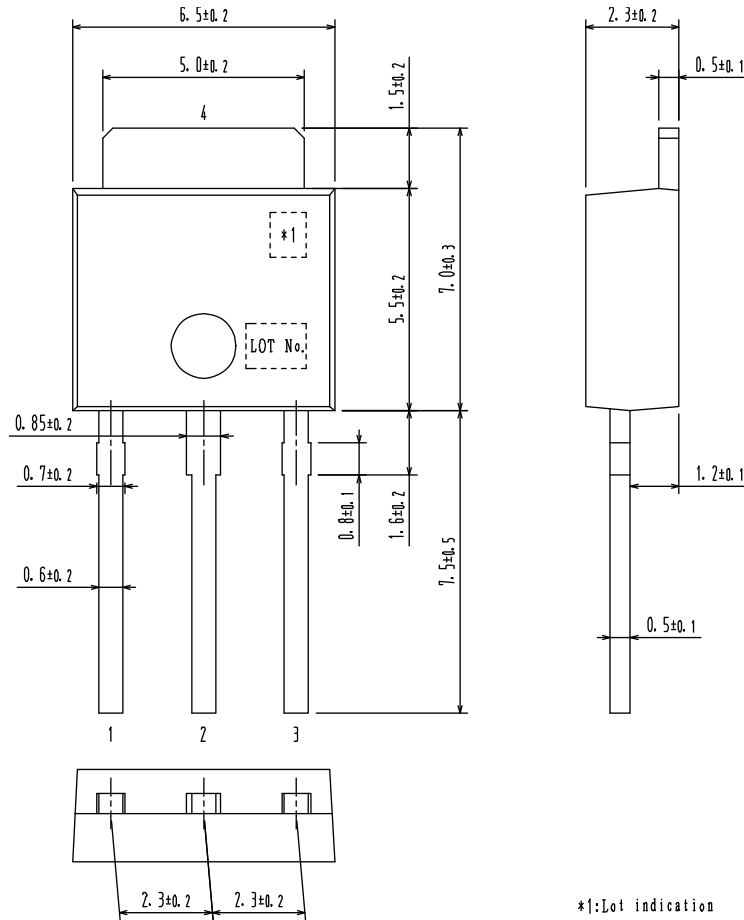


1:Gate

2:Drain

3:Source

4:Drain



## Ordering & Package Information

Device	Package	Shipping	Note
SFT1342-E	IPAK(TP) SC-64,TO-251	500pcs. / bag	Pb-Free
SFT1342-W			Pb-Free and Halogen Free
SFT1342-TL-E	DPAK(TP-FA) SC-63,TO-252	700pcs. / reel	Pb-Free
SFT1342-TL-W			Pb-Free and Halogen Free

Note on usage : Since the SFT1342 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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