

Industrial model	Popular name	Package identification	Packing method	Quantity per tube	Quantity per box	Quantity per carton
KEF840C	KEF840C KEF840C	B: TO-220AB F: TO-220FP	TUBE	50/tube	1Kpcs/box	5Kpcs

- APPLICATION
ELECTRONIC BALLAST
ELECTRONIC TRANSFORMER
SWITCH MODE POWER SUPPLY
FEATURES

$$I_D = 9A$$
$$BV_{DSS} = 500V$$
$$R_{DS(on)} = 0.53 \Omega$$

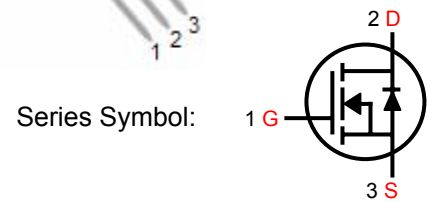
- LOW ON-RESISTANCE
FAST SWITCHING
HIGH INPUT RESISTANCE
RoHS COMPLIANT
Package: TO-220AB & TO-220F

KEF840C Series Pin Assignment



3-Lead Plastic TO-220AB
Package Code: P
Pin 1: Gate
Pin 2 & Tab: Drain
Pin 3: Source

3-Lead Plastic TO-220FP
Package Code: F
Pin 1: Gate
Pin 2: Drain
Pin 3: Source



ABSOLUTE MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain to Current — Continuous	I_D	9.0	A
— Pulsed	I_{DM}	32	
Gate-to-Source Voltage — Continue	V_{GS}	± 20	V
— Non-repetitive	V_{GSM}	± 40	V
Total Power Dissipation	P_D		W
TO-220		125	
TO-220FP		40	
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}C$
Single Pulse Drain-to-Source Avalanche Energy — $T_J = 25^{\circ}C$ ($V_{DD} = 100V, V_{GS} = 10V, I_L = 8A, L = 10mH, R_G = 25\Omega$)	E_{AS}	320	mJ
Thermal Resistance — Junction to Case	θ_{JC}	1.0	$^{\circ}C/W$
— Junction to Ambient	θ_{JA}	62.5	
Maximum Lead Temperature for Soldering Purposes, 1/8" from case for 10 seconds	T_L	260	$^{\circ}C$

ELECTRICAL CHARACTERISTICS

Unless otherwise specified, $T_J = 25^\circ\text{C}$.

		KEF840C			
Characteristic	Symbol	Min	Typ	Max	Units
Drain-Source Breakdown Voltage ($V_{GS} = 0\text{ V}$, $I_D = 250\text{ }\mu\text{A}$)	$V_{(BR)DSS}$	500			V
Drain-Source Leakage Current ($V_{DS} = 500\text{ V}$, $V_{GS} = 0\text{ V}$) ($V_{DS} = 400\text{ V}$, $V_{GS} = 0\text{ V}$, $T_J = 125^\circ\text{C}$)	I_{DSS}			0.25 1.0	mA
Gate-Source Leakage Current-Forward ($V_{gsf} = 20\text{ V}$, $V_{DS} = 0\text{ V}$)	I_{GSSF}			100	nA
Gate-Source Leakage Current-Reverse ($V_{gsr} = 20\text{ V}$, $V_{DS} = 0\text{ V}$)	I_{GSSR}			100	nA
Gate Threshold Voltage ($V_{DS} = V_{GS}$, $I_D = 250\text{ }\mu\text{A}$)	$V_{GS(th)}$	2.0		4.0	V
Static Drain-Source On-Resistance ($V_{GS} = 10\text{ V}$, $I_D = 4.0\text{ A}$) *	$R_{DS(on)}$			0.6	Ω
Drain-Source On-Voltage ($V_{GS} = 10\text{ V}$) ($I_D = 8.0\text{ A}$)	$V_{DS(on)}$		5.0	7.2	V
Forward Transconductance ($V_{DS} = 50\text{ V}$, $I_D = 4.0\text{ A}$) *	g_{FS}	4.9			mmhos
Input Capacitance	$(V_{DS} = 25\text{ V}$, $V_{GS} = 0\text{ V}$, $f = 1.0\text{ MHz}$)	C_{iss}	1450	1680	pF
Output Capacitance		C_{oss}	190	246	pF
Reverse Transfer Capacitance		C_{rss}	45.4	144	pF
Turn-On Delay Time	$(R_{Go} + C17n = 9.1\Omega) *$	$t_{d(on)}$	15	50	ns
Rise Time		t_r	33	72	ns
Turn-Off Delay Time		$t_{d(off)}$	40	150	ns
Fall Time		t_f	32	60	ns
Total Gate Charge	$(V_{DS} = 400\text{ V}$, $I_D = 8.0\text{ A}$, $V_{GS} = 10\text{ V})^*$	Q_g	40	64	nC
Gate-Source Charge		Q_{gs}	8.0		nC
Gate-Drain Charge		Q_{gd}	17		nC
Internal Drain Inductance (Measured from the drain lead 0.25" from package to center of die)	L_D		4.5		nH
Internal Drain Inductance (Measured from the source lead 0.25" from package to source bond pad)	L_S		7.5		nH
SOURCE-DRAIN DIODE CHARACTERISTICS					
Forward On-Voltage(1)	$(I_S = 8.0\text{ A}$, $V_{GS} = 0\text{ V}$, $dI_S/dt = 100\text{ A}/\mu\text{s}$)	V_{SD}		1.5	V
Forward Turn-On Time		t_{on}	**		ns
Reverse Recovery Time		t_{rr}	320		ns

* Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

** Negligible, Dominated by circuit inductance

TYPICAL ELECTRICAL CHARACTERISTICS

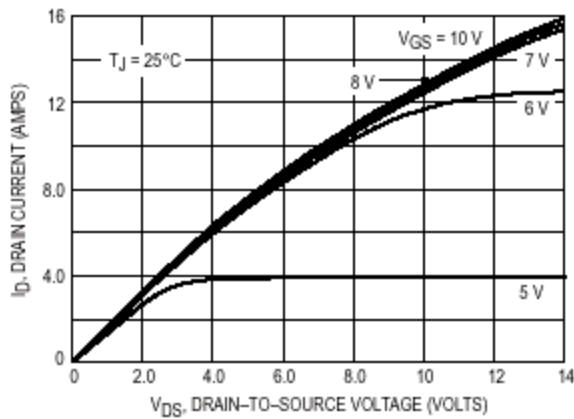


Figure 1. On-Region Characteristics

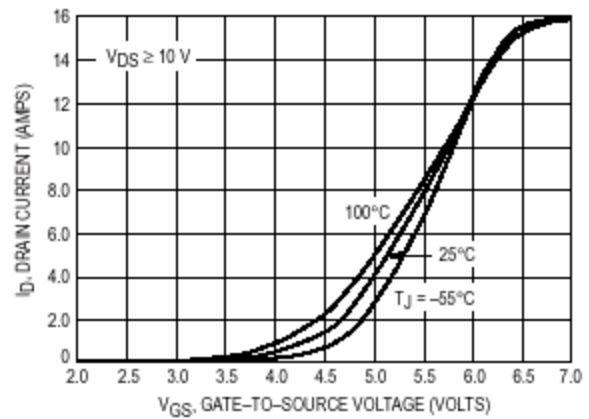


Figure 2. Transfer Characteristics

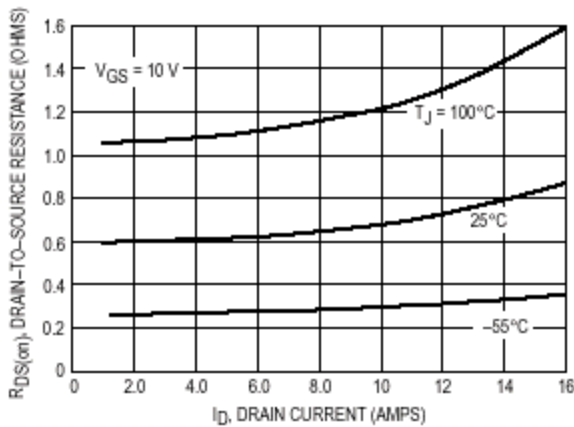


Figure 3. On-Resistance versus Drain Current and Temperature

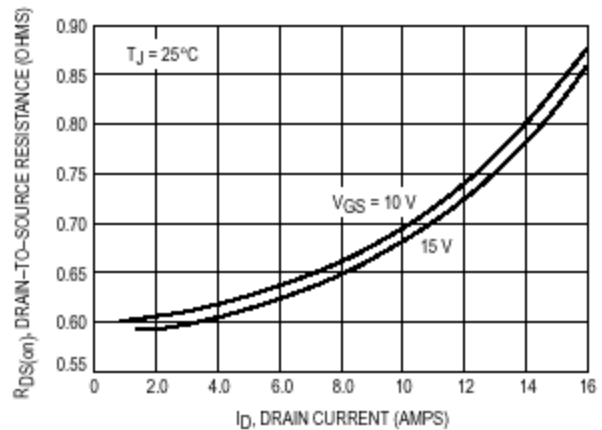


Figure 4. On-Resistance versus Drain Current and Gate Voltage

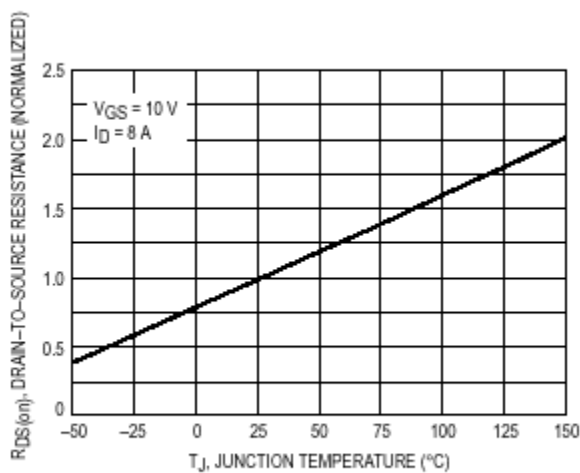


Figure 5. On-Resistance Variation with Temperature

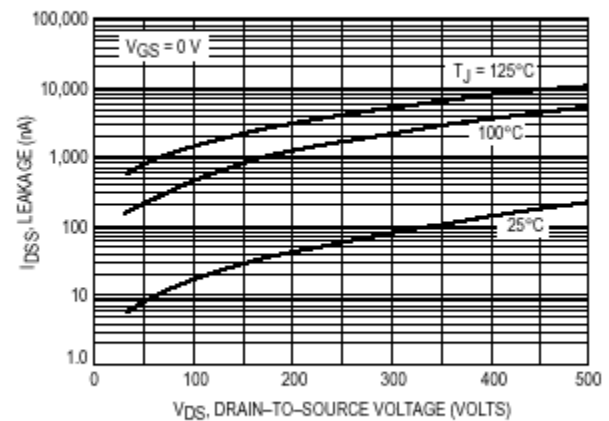
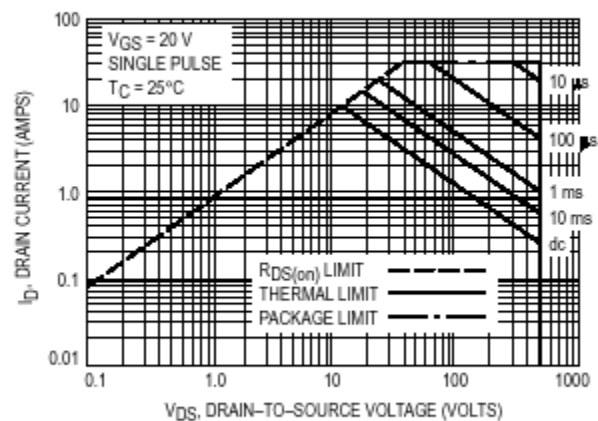
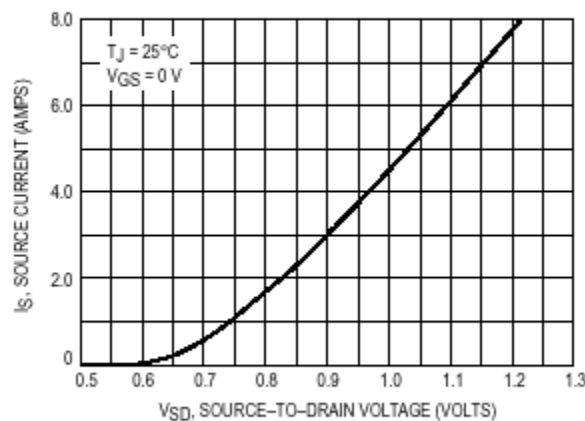
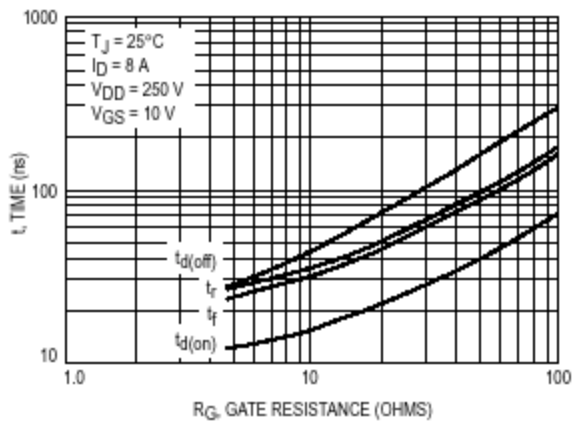
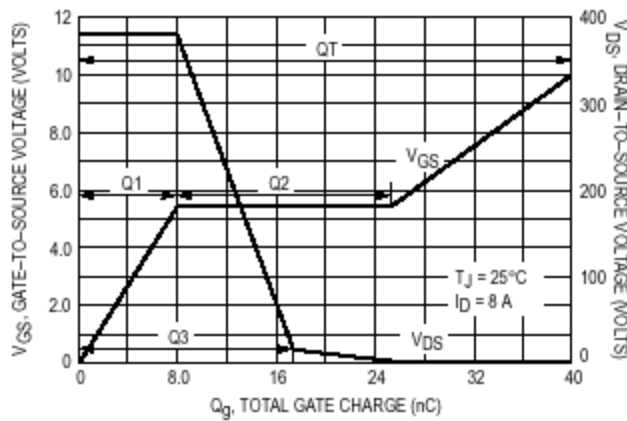
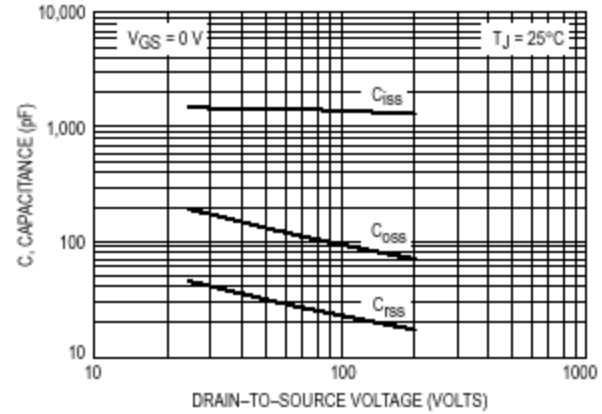
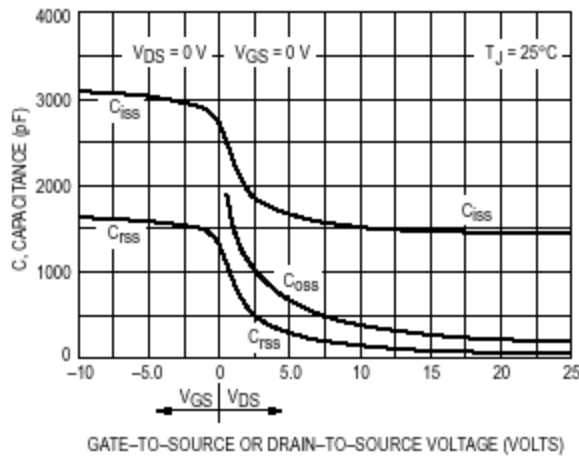
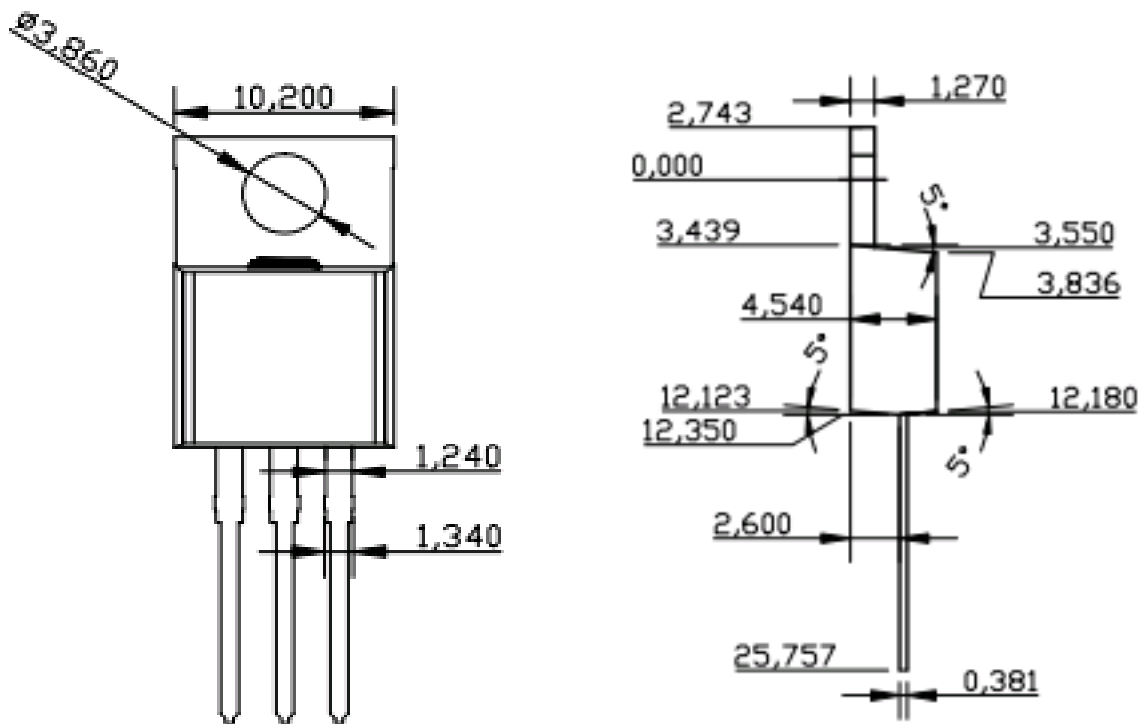


Figure 6. Drain-to-Source Leakage Current versus Voltage



■ TO-220-3L Package outline dimensions



■ TO-220F-3L Package outline dimensions

